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THE AMERICAN ARCHITECT AND BUILDING NEWS

A WEEKLY JOURNAL OF CONSTRUCTIVE AND DECORATIVE ART.

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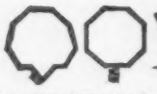

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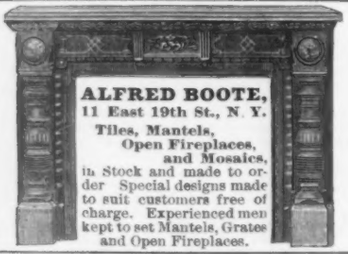

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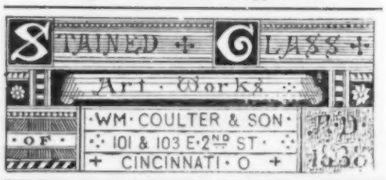

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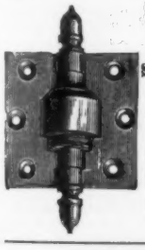

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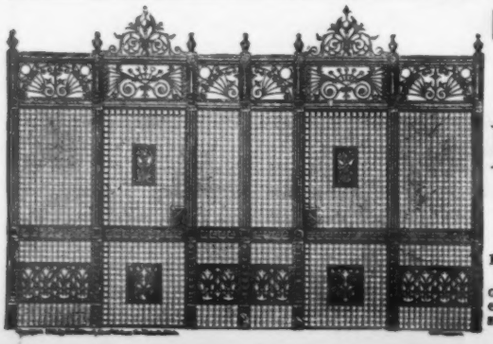

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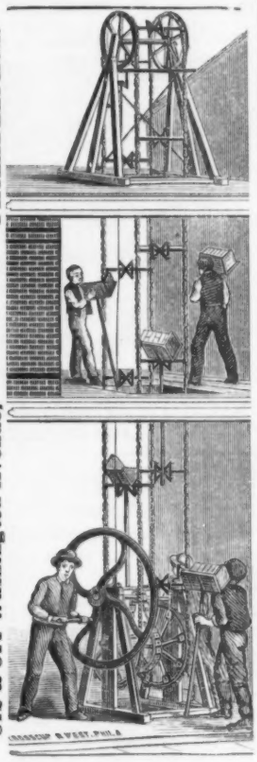

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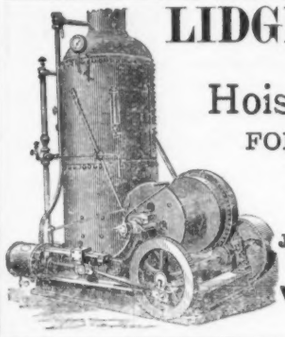

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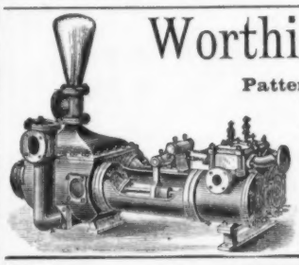

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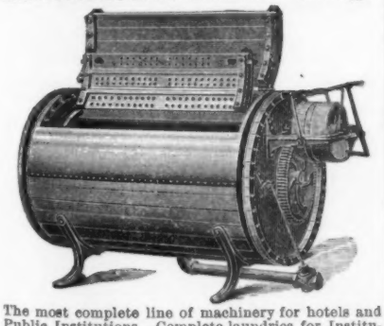

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BRICK.—₱ M.	New York. (Wholesale Prices.)	Boston. (Prices to Builders and Contractors.)	Chicago. (Prices to Builders and Contractors.)	Philadelphia (Prices to Builders and Contractors.)
Common: *Cargo afloat.*				
Pale	4 25 @ $4 75	Eastern 7 50 @ 8 00	Building Brick 9 00 @ 10 00	Sq. Hard @ 10 00
Jersey	5 75 @ 6 25	Bay State Hard 9 50		" @ 8 00
Long Island	@	Domestic Com. 9 00 @ 9 50	Indiana Pressd 16 00 @ 22 00	Salmon @ 6 00
Up River	6 25 @ 7 00	Domestic Face 19 00 @ 20 00	St. Louis Fronts @ 27 00	Sq. " @ 8 00
Haverstraw Bay	7 00 @ 7 25	Philadelphia 40 00 @ 45 00		Light Stretchers @ 10 00
" 1st	7 50 @ 7 75	Phila. mould 50 00 @ 80 00		Medium " @ 11 00
Hollow	@ 13 00		22 00 @ 29 00	Red " @ 12 00
Fronts:			65 00 @ 350 00	Dark " @ 14 00
Croton, Brown	11 00 @ 14 00		@ 50 00	Pressed 22 00 @ 24 00
" dark	12 00 @ 15 00	Glens Falls 25 00 @ 26 00	@ 45 00	Best Paving @ 15 00
" red	12 00 @ 15 00		38 00 @	Second " @ 12 00
Chicago pressed		Glens Falls Mould. 30 00 @ 35 00	25 00 @	Third " @ 11 00
Chicago Moulded		35 00 @ 40 00	60 00 @ 100 00	
Baltimore	37 00 @ 41 00	45 00 @ 60 00	30 @	
Glens Falls—white	30 00 @ 35 00		35 @	
Philadelphia	24 00 @ 25 00		55 00 @ 65 00	
Trenton	24 00 @ 25 00			
Milwaukee				
Moulded:				
Clark's Glens Falls—Red	25 00 @ 27 00	@ 100 00	@ 100 00	Dom. @ 65
" —White	30 00 @ 35 00	@	@ 120 00	@ 85
White " Mold,	45 00 @ 60 00			
Enamelled: *Imp.*				
Enamelled (edge.)	85 00 @ 100 00			
Enamelled (edge and end)	90 00 @ 115 00			
CEMENT, LIME, etc.—(₱ *cask.*)				
Rosendale Cement	1 00 @ 1 10	@ 1 50	*Not Sold.*	1 15 @ 1 50
Louisville "			1 05 @ 1 30	Book, Shoobridge 2 85 @ 3 25
Utica, Akron, Buffalo, Milw'kee.	*Not sold.*	*Not sold.*	1 00 @ 1 25	2 85 @ 3 25
Portland, English (Gibbs)	2 50 @ 3 10	@ 3 00	3 25 @ 3 40	2 85 @ 3 25
" " (K. B. & S.)	2 75 @ 3 10		3 25 @ 3 50	2 85 @ 3 25
" " (Burham)	2 50 @ 2 80		3 15 @ 3 35	2 85 @ 3 25
" " (White's)	2 65 @ 3 00			
" French (Lafarge)	3 50 @ 4 50	*Not sold.*	3 75 @ 4 25	Hemmoor 2 85 @ 3 25
" German (Aisen)	2 75 @ 3 15	3 00 @ 3 50	3 25 @ 3 50	2 65 @ 3 00
" " (Fewer)	2 45 @ 2 70	3 15 @ 3 35	3 15 @ 3 35	Josson 2 85 @ 3 00
" " (Vorwohler)	2 50 @ 3 25		3 00 @ 3 25	2 85 @ 3 25
" " (Lagerdofer)	2 25 @ 2 55	*Not sold.*	3 00 @ 3 25	2 85 @ 3 25
" " (Dyckerhoff)	2 75 @ 3 15	3 00 @ 3 50	3 25 @ 3 50	2 50 @ 2 75
" " (Hanover)	2 50 @ 3 00		*Not Sold.*	3 00 @ 3 50
" American (Saylor's)	2 15 @ 2 30	2 15 @ 2 50	2 75 @ 3 00	6 50 @ 7 00
Roman	2 75 @ 3 00	@ 3 20	2 75 @ 3 25	11 50 @ 12 00
Keene's coarse	5 00 @ 6 50	@ 7 50	7 00 @ 7 50	
" superfine	8 75 @ 11 00	@ 11 50	11 00 @ 12 00	
Lime:				
Lime of Teil	@ 5 00		*Not sold.*	White Lime 28 @ 85 ₱ bush.
Hydraulic Lime	@ 1 45	@ 145		White Mash 1 25 @ 150
Chicago Lime in bulk			60 @ 65	1 00 @ 1 00
Wisconsin "			75 @ 85	
Rockland and Rockport, (Com.)	@ 1 00	@ 1 15	*Not sold.*	
Rockland and Rockport, finish.	@ 1 20	@ 1 20	*Not sold.*	
State, com. cargo rates (nom.)	@ 90	*Not sold.*	*Not sold.*	*Not sold.*
State, finishing "	@ 1 10	*Not sold.*	*Not sold.*	*Not sold.*
Plaster of Paris (calcined.)	@ 1 25	1 65 @ 1 90	@ 1 75	1 25 @ 2 25
" (casting)	@ 1 45	@ 2 25	@ 1 75	1 75 @ 2 50
Hair (Cattle) ₱ *bush.*	21 @ 25	@ 30	20 @ 25	22 @ 30
" (Goat)	30 @ 35	@ 30	35 @ 40	30 @ 35
Sand, ₱ *load*	1 00 @ 1 25	1 00 @ 1 75	100 @ 1 25	@ 1 50
STONE. (₱ *cubic foot, rough.*)				
Granite: (*Maine*)		@ 60		55 @ 65
Limestone:	45 @ 1 25			
Bedford	@ 1 00	95 @ 1 00	50 @	80 @ 90
Joliet	@		35 @ 55	
Lemont	@		35 @ 60	
Serpentine	@		80 @ 90	4 50 ₱ Perch.

(*Continued on page vi.*)

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Foundation:				
Dimension	@	5 00 ℔ ton	20 @ 28	1 45 @ 2 50
Block	@	4 60 ℔ perch	8 50 ℔ cord.	Conshocken 1 45 @ 2 50
Rubble	@	1 25 @ 1 50	8 50 @	
Bluestone: (℔ *sq. ft.*)				
Sidewalk	30 @ 5 00	40 @ 1 75	75 @ 1 00	1 in. th. 10 @ 19
Planed	50 @ 6 00	75	50 @ 1 00	37 @ 45
Sandstone,				
Longmeadow	@ 80	80 @ 90		1 05 @ 1 15
Kibbe	@ 90	90 @ 1 10		
Brown (Connecticut)	1 00 @	1 25 @ 1 45	1 50 ℔ cub. ft.	1 05 @ 1 35
Amherst }	90 @ 95	85 @ 95	55 @ 65	
Berea } Ohio	75 @ 1 00	80 @ 90	45 @ 55	80 @ 1 00
Berlin }	75 @ 1 00	80 @ 90	55 @ 65	
Belleville	80 @ 1 25	1 25 @ 1 35	"	1 10 @ 1 40
New Brunswick and Nova Scotia	@ 1 00	75 @ 90	"	1 00 @ 1 10
Caen	@	@ 2 00	"	1 15 @ 1 50
Marble (℔ *cu. ft.*)				
Lee, Mass	@	1 75 @ 2 50	*Not sold.*	2 00 @ 2 50
Rutland, white	@	@ 3 00	3 50 @ 5 00	2 25 @ 2 50
Sutherland Falls	1 25 @ 1 75	@ 2 00	3 50 @ 5 00	1 70 @ 3 00
Glens Falls, black	@	2 00 @ 3 00	*Not sold.*	4 00 @ 4 50
Italian, blue-veined	@	50 @ 60	@ 4 40	2 50 @ 2 75
" Sienna	@	3 00 @ 3 50	*Not sold.*	@ 5 00
Tennessee, red	@	1 25 @ 2 50	@ 4 40	4 00 @ 6 00
" Knoxville	@	85 @ 90	@ 4 40	3 00 @ 4 00
Pennsylvania, blue	@		*Not sold.*	2,00 @ 3 00
Vermont, white	@	1 50 @ 2 00	3 50 @ 5 00	2 25 @ 3 00
Slate: Roofing (℔ *square*)	7 00 @ 8 00	4 50 @ 7 00	6 25 @ 8 10	5 00 @ 7 00
" green	@ 5 75	@ 5 75		5 00 @ 7 00
" " unfading	7 00 @ 8 50	5 50 @ 6 50	@ 8 60	@ 11 00
" purple	@ 15 00	13 00 @ 14 00	— @ 16 00	@ 11 00
" red	— @ —	Brownville, Me.	7 20 @ 7 60	@ 3 00
" black, Lehigh	— @ —	6 50 @ 9 00	7 30 @ 8 00	@ 5 35
" " Chapmans	5 50 @ 8 00	5 50 @ 8 00	6 00 @ 8 50	@ 5 35
" Unfading Black, Monson, Me.	@		*Not sold.*	@ 27 00
Tiles, Am. ℔ M				@ 7 00
N. Peach Bottom, warranted unfading				
PAINTS. (*In oil,* ℔ *lb.*)				
White lead, Am	7 @ 7½	7 @ 7½	7 @ 7½	@ 7
" Zinc, "	5 @ 8½	7 @ 8	7 @ 10½	@ 7½
Red lead, Am.,	5½ @ 6½	6 @ 6½	6½ @ 7	@ 7
" Venetian	6 @ 10	7 @ 12	1½ @ 2½	dry Eng. @ 1½
" Vermilion	65 @ 70	55 @ 60 dry	55 @ 60	Eng. 18
Red Indian, Eng	12 @ 20	12 @ 20	12 @ 20	
Yellow Ochre	6 @ 15	7 @ 12	3 @ 15	dry Am. @ 1½
" Chrome	12 @ 20	18 @ 25	15 @ 25	@ 20
Green (chrome)	8 @ 13	8 @ 20	10 @ 20	@ 20
Green, Paris,	25 @ 40	25 @ 40	18 @ 35	" @ 20
Black, lamp,	15 @ 25	15 @ 25	8 @ 30	@ 16
Blue, ultramarine	12 @ 18	18 @ 30	12 @ 35	@ 20
Oil, linseed, (raw) (℔ gal.)	40 @ 41	40 @ 42	40 @ 41	@ 45
" " boiled (℔ gal.)	43 @ 44	43 @ 45	43 @ 44	@ 48
Turpentine (℔ gal.)	@ 35	36 @ 39	40 @ 42	@ 40
Varnish, coach (℔ gal.)	@	1 50 @ 6 00	1 25 @ 2 00	@ 2 25
Shellac (℔ gal.)	@	2 50 @ 3 00	3 25 @ 4 00	@ 2 90
Putty (℔ lb.)	2 @ 3	2 @ 4	02 @ 02½	@ 2
Whiting (℔ cwt.)	75 @ 1 00	1 @ 1½	1 @ 1½	@ 1
Paris white, (Eng.,) (℔ cwt.)	1 30 @ 2 00	2 @ 3	1½ @ 2	@ 1½
Litharge, Am (℔ lb.)	5½ @ 6	6½ @ 7	6½ @ 6½	@ 7
Sienna (burnt) (℔ lb.)	14 @ 20	14 @ 20	4 @ 16	@ 16
Umber, " (℔ lb.)	14 @ 20	14 @ 20	2 @ 10	@ 14
HARDWARE.				
Nails: (*Per Cask.*)				
Spikes, (*wrought.*)	@ 2 50	@ 2 40	3 50 @	per keg @ 2 90
10d. common	@ 2 35	@ 2 40	@ 2 40	@ 2 65
Shingle	@ 3 00	@ 3 15	@ 3 15	@ 3 15
Lath	@ 4 55	@ 4 65	@ 5 50	@ 5 25
(*Finishing nails according to size.*)			Add $3.00	per ℔ 11 @ 14
(*For casing nails add 75c. per keg.*)				Add 1 00 pr cask
Butts: 4" x 4" (℔ doz. pairs.)				
Plain	@ 1 00	@ 1 20	65 @ 1 00	@ 1 16
Japanned	@ 1 50	@ 1 75	*Not sold.*	1 75 @ 2 00
Acorn, Japanned	@ 1 50	@ 2 50	2 00 @ 3 75	1 75 @ 2 00
Acorn, Boston finish (℔ pair.)	@ 65	@ 75	*Not sold.*	@ 50
Bronze metal	@ 1 90	plain 2 25	2 00 @ 3 25	@ 1 37
Brass (for cupboards)	@ 10	@ 10	@ 12	@ 1 00
Ebony				@ 35
Apple wood				37 @ 1 00
Knobs: (℔ *Set.*)				
Mineral, best	@ 8	@ 10	8 @ 10	@ 08
Lava	@ 50	@ 75	65 @ 80	*Not sold.*
Hematite	*Not sold*	17 @ 38	31 @ 40	25 @ 50
Porcelain	@ 30	@ 12	25 @ 30	@ 30
Glass, solid	*Not sold*	@ 75	*Not sold.*	1 75 @ 2 00
Glass, silvered	*Not sold*	88 @ 1 50	@ 1 50	1 75 @ 2 00
Bronze metal	75 @ 2 00	88 @ 2 00	75 @ 2 50	50 @ 3 50
Brass	1 00 @ 2 50	88 @ 2 00	1 50 @ 3 00	50 @ 3 50
Solder:		16 00 @ 17 00	13 00 @ 15 %	22 @ 35
Iron:				
I-Beams up to 12"	@ 3	@ 3	@	
I-Beams above 12"	@ 3	@ 3	@ 4	30' 2½ @ 2¾
Channel-Beams up to 12"	@ 3	@ 3	@ 4	

(*Continued on page* vii.)

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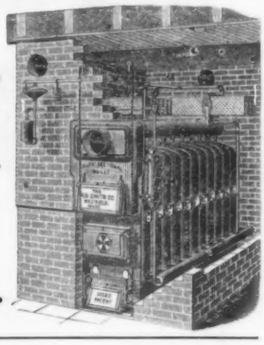

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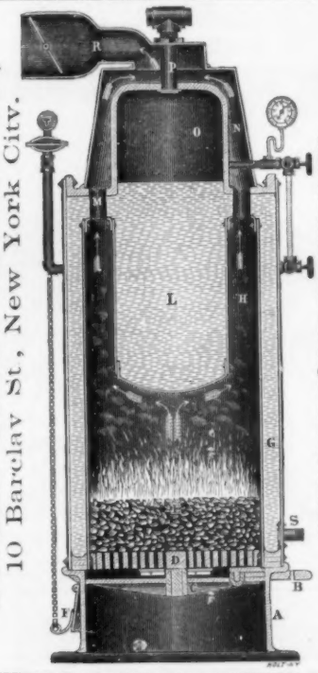

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Boards: (*Ordinary dimensions.*)				
Pine, 1st quality, clear	65 00 @ 75 00	50 00 @ 60 00	46 00 @ 48 00	55 00 @ 60 00
" 2d quality	55 00 @ 60 00	42 00 @ 48 00	44 00 @ 46 00	40 00 @ 50 50
" 3d quality	18 00 @ 22 00	35 00 @ 40 00	43 00 @ 45 00	15 00 @ 30 00
Spruce	@ 25 00	13 00 @ 15 00	*Not sold.*	@ 35 00
Hemlock	ea. 17 @ 18	12 00 @ 13 00	@ 10 00	@ 14 00
Yellow pine	20 @ 40	25 00 @ 40 00	@ 28 00	20 00 @ 50 00
Cypress	@	32 00 @ 40 00	@	40 00 @ 45 00
Clapboards:				
Pine	@	33 00 @ 55 00	10 50 @ 22 00	20 00 @ 35 00
Spruce	@	23 00 @ 35 00	*Not sold.*	*Not Sold.*
Framing Timber:				
Pine			12 00 @ 17 00	28 00 @ 32 50
Spruce	13 50 @ 16 00	14 00 @ 16 00	*Not sold.*	20 00 @ 22 50
Hemlock	12 00 @ 15 00	@	10 50 @ 15 50	12 50 @ 13 50
Yellow pine	18 00 @ 25 00	23 00 @ 30 00		26 00 @ 28 00
Laths:				
Pine	@	2 25 @ 2 35	1 75 @	@ 3 00
Spruce	2 25 @ 2 40	2 25 @ 2 50	*Not sold.*	@ 2 75
Shingles:				
Pine, shaved ₱ M	5 00 @ 6 00	@	*Not sold.*	
Pine, sawed "	4 00 @ 5 00	@ 4 50	2 40 @ 2 60	
Spruce, sawed "	1 50 @ 2 00	1 50 @ 2 00	*Not sold.*	
Redwood ₱ 125	1 40 @ 1 60	3 75 @ 4 50	5 50 @ 8 00	30" $10 @ 28
Cedar, split ₱ M	@	@	*Not sold.*	24" 8 @ 21
Cedar, sawed "	@	2 00 @ 4 00	2 25 @ 2 35	20" 5 50 @ 14
Cypress. Split...7 x 24. "	18 00 @ 20 00	5 50 @ 6 00	4 00 @ 4 50	13 @ 20 00
Miscellaneous:				
Piles ₱ ft.	4½ @ 5½	Piles 6c. ₱ ft.	*Not sold.*	
Fence pickets, Spruce	8 00 @ 10 00	10 00 @ 18 00	Pine, 8 @ 21 00	12 00 @ 14 00
Cedar posts, 9 ft. (sq. posts.)	@	25 @ 35	9 00 @ 21 00	70 @ 1 25
Chestnut "	@	25 @ 35	*Not sold.*	28 @ 36
Finishing Woods: ₱ M. (*First Qual.*				
Ash [*Kiln-dried.*]	@ 55 00	38 00 @ 50 00	35 00 @ 40 00	35 00 @ 50 00
Cherry	80 00 @120 00	60 00 @ 100 00	80 00 @ 100 00	75 00 @ 120 00
Chestnut	@ 55 00	38 00 @ 50 00	45 00 @ 50 00	40 00 @ 50 00
Butternut	40 00 @ 60 00	60 00 @ 70 00	50 00 @ 60 00	67 50 @ 75 00
Mahogany, Baywood [Mexican]	@180 00	150 30 @ 160 00	150 00 @ 180 00	150 00 @ 250 00
" St. Domingo	@350 00	120 00 @ 350 00	250 00 @ 300 00	200 00 @ 300 00
Maple	45 00 @ 50 00	45 00 @ 60 00	30 00 @ 35 00	27 50 @ 55 00
Oak, red	@ 70 00	@ 50 00	35 00 @ 40 00	35 00 @ 45 00
" white	@ 70 00	50 00 @ 55 00	35 00 @ 40 00	40 50 @ 50 00
" quartered	@ 90 00	65 00 @ 70 00	45 00 @ 50 00	57 50 @ 67 50
Sycamore quartered		50 00 @ 65 00	40 00 @ 50 00	57 50 @ 67 50
Pine, clear	65 00 @ 70 00	30 00 @ 65 00	45 00 @ 50 00	@ 65 00
Redwood	60 00 @ 70 00	60 00 @ 70 00	56 00 @ 65 00	72 50 @ 75 00
Rosewood ₱ lb	@ 6		@ 7	
Walnut, black	125 00 @150 00	85 00 @ 120 00	80 00 @ 100 00	90 00 @ 200 00
Whitewood	45 00 @ 50 00	38 00 @ 45 00	30 00 @ 35 00	25 00 @ 45 00
Yellow pine ₱ M	@ 45 00	40 00 @ 45 00	30 00 @ 35 00	37 50 @ 45 00
Gumwood, best red			30 00 @ 35 00	

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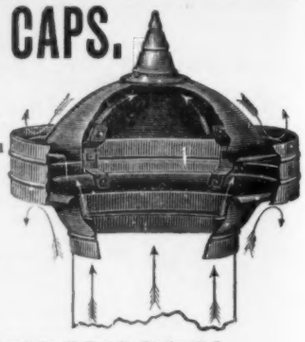

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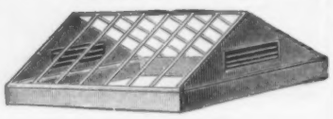

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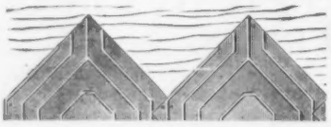

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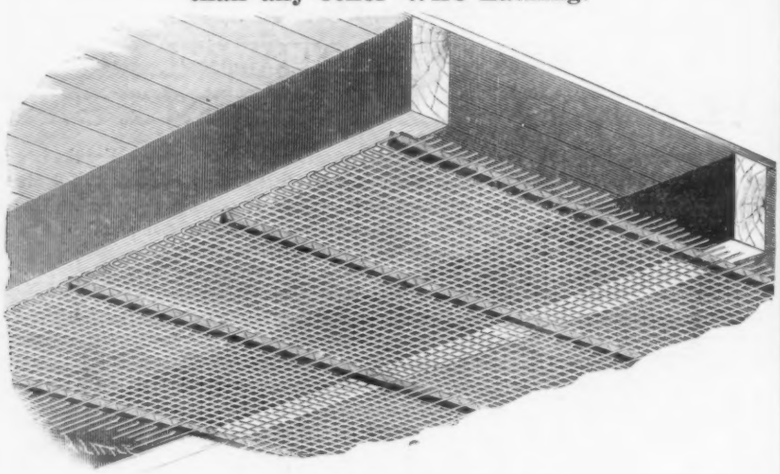

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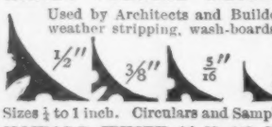

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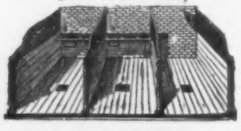

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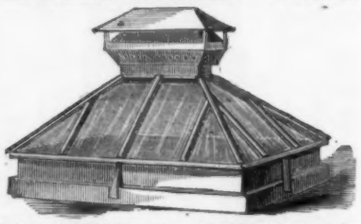

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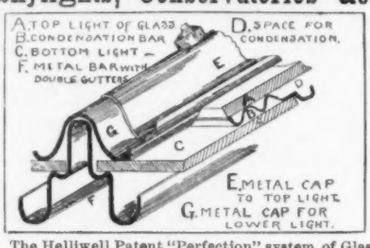
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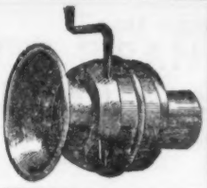

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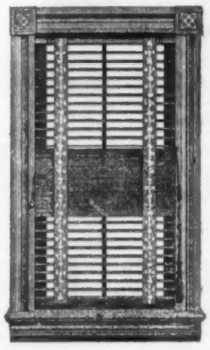

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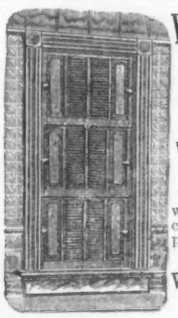

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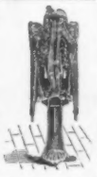

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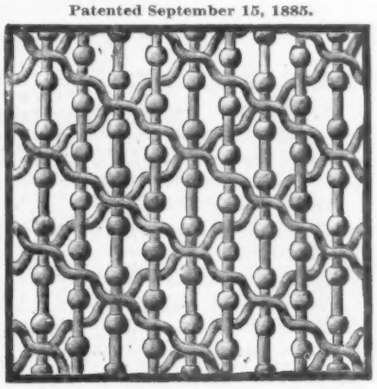

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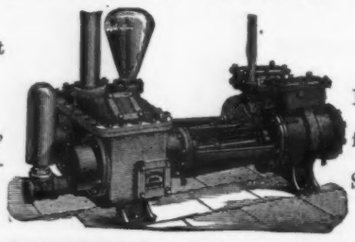

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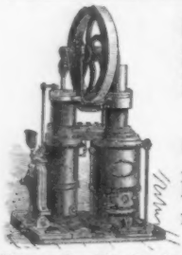

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THE Boston carpenters who voted last week, just as we were going to press, that those members of their Union who could find work should be allowed to take it on the old basis of ten hours' labor for the same wages that they refused three weeks before, seem to connect their defeat in some mysterious way with the architects. The principal manager of the Union, in his speech announcing that the contest was officially abandoned, explained that "the trouble all came from Devonshire Street," that "Norcross Brothers had been boycotted by the Master Builders' Association in conjunction with the architects," and there seemed to be nothing left but to acknowledge defeat. As no other theory was offered to account for the Union's mishap, except the somewhat indistinct one that the master builders had succeeded in making the men "victims" to their iniquitous desire to "stamp their heels on their heads, and eat the whole oyster of their labor," we suppose that the unfortunate architects of Boston will be branded for an indefinite period as "lepers among society," unless some one raises his voice to defend them. We therefore hasten to say that we do not believe that any architect in the city so much as dreamed of exercising any influence whatever, even if he had supposed he possessed any, over either masters or men, in a quarrel which concerned only their respective rights; although the practical result of the strife has been to take away nearly all the "oysters" of the architects' labors for the year, while the opposing parties have been contending over the shells.

THE story on which the attack on the architects is said to have been based is too absurd on its face to have deceived any but the most gullible of mankind. It seems that Norcross Brothers, the alleged victims of the architects' "boycott," who are well-known contractors, telegraphed some days ago to their agent in Boston, where they had work going on, to offer their men a day of nine hours, with payment by the hour at about the usual rates. As the Norcross Brothers have long practised payment by the hour, there was nothing very extraordinary about this offer; and they were probably more astonished than any one else at learning that a gigantic meeting of carpenters had been held to consider their proposition, and that an almost unanimous vote was passed to the effect that the trade should "accept" a day of nine hours as a "compromise" between the contractors' standard of ten, and the agitators' ideal of eight. Explanations followed, and it was discovered that the Norcross Brothers had been "playing a trick" upon the Carpenters' Union, and that instead of opening their arms to the entire trade on the nine-hour basis, they had only intended their offer to apply to the men whom they had formerly employed and wanted to take back. As no contractor, not a candidate for a lunatic asylum, would have thought of anything else than this, it is rather curious that the leaders of the Union should have seen anything "tricky" or unaccountable in it. It suited their purposes, however, to pretend that the Norcross Brothers had in some mysterious way been enslaved by the "enemies" of "mankind in general and the workman in particular;" and as they could not think of any other persons to whose opinions the Messrs. Norcross were in the habit of paying much attention, they seem to have fallen, by a process of elimination, upon the architects as the authors of their woes, and, reasoning backward, they arrived at the conclusion that "the architects" must have notified the Norcross Brothers that unless their offer of a nine-hour day were immediately withdrawn "their contracts would be cancelled." It would be interesting to know how these malignant professional men would have gone to work to "cancel" a building contract on such grounds as this, but the story seems to have had just enough semblance of possibility to serve as an excuse for laying the responsibility of the agitators' defeat on persons who would not be likely to hear of the accusation or resent it. The meeting, satisfied with this explanation, broke up in great enthusiasm, after repeated raisings of the right hand, and oaths of fidelity to the Union, and the adoption of the most scorching resolutions of defiance to the "evil genius," the "selfishness," "greed" and "contemptible arrogance" of the master builders, and of menace to the "scabs" who had proved themselves a "curse to humanity," and "their own worst enemies," by "not taking part in the united effort" of those with whose opinions on a certain subject they happened not to agree.

THE Board of Managers of the Allegheny Cemetery, at Pittsburgh, Pa., proposes to build an ornamental stone fence, and entrance gate, at a cost not exceeding seventy thousand dollars, and invites architects to submit designs and specifications. A premium of one thousand dollars is offered for the plan and specification which may be accepted by the Board, but the right is reserved to reject all designs. The drawings are to be made at a scale of one-eighth of an inch to the foot, and plans and specifications, with estimates of cost, must be sent in before July 1 next. Nothing is said in the circular issued by the Board about the way in which the designs are to be judged, or whether any professional expert is to be consulted in regard to the practicable character of the plans, or the correctness of the estimates; and as architects who value their time and skill seldom care to venture into competitions without some guarantee in these particulars, we hope, both for the sake of the Board, which offers a tolerably liberal premium, and seems to wish to interest architects of character and ability, and for the sake of the profession, which suffers by every unskilfully managed or doubtful competition, that further explanations may be given. If well carried out, such a competition might be made a very successful one. The problem of designing a cemetery entrance and enclosure offers as good an opportunity for artistic expression as any that we know of, and a man of first-rate talent and skill might easily treat such a subject in a manner which would gain for him, and for the community which had employed him, enduring fame. The requirements for engaging men of exceptional ability in competitions of the sort consist simply in the guarantee of fair and honorable treatment, judgment of their works by thoroughly competent experts, and adequate remuneration. The second of these three is, to the professional mind, involved in the first, and there are few good architects, who do not regard it as the most essential condition of all. If any of our readers wish to learn more on the subject, they should write to Mr. John Perring, Superintendent of Allegheny Cemetery, Pittsburgh, Pa.

A GOOD deal is said just now about insurance against hail, and, notwithstanding the misfortunes of the older hail insurance companies, the florists of the country, who have a very serious interest in the matter, are at this moment engaged in trying to form new ones. Fortunately, perhaps, for the florists who are tempted to enter into mutual obligations of the kind, the *Spectator* has collected some statistics of the history of the hail insurance companies now existing here. Four of these are incorporated in Pennsylvania, and do a considerable business in insuring growing tobacco against loss or injury by hail storms. After from three to six years' experience, the directors of the Pennsylvania companies have concluded that they are doing a losing business. The premiums charged were high, the companies demanding one and one-third per cent in cash, and a note for six per cent on the amount insured, but even these resources were far too small to pay the losses of the last year, in the course of which forty per cent of the policy-

holders claimed indemnity to a greater or less amount. The collection of the six per cent premium note, as might be expected, excited the indignation, if not the positive resistance, of nearly all the policy-holders; while, as the whole amount so collected did not pay one-half of the losses, the policy-holders who lost property grumbled still more than those who escaped. The net result seems to have been dissatisfaction, repining and broken contracts all around. Two out of the four companies in existence last year have already retired from the business, a third is in process of winding up its affairs, and the managers of the remaining one are deliberating whether they had not better follow the example of their fellows. The fact seems to be that the business of any hail insurance company, particularly a mutual one, is usually confined to so small a territory that every storm affecting a portion of its territory is likely to cover the whole, and forty per cent losses are quite as liable to occur as smaller ones. The remedy for this would be to extend operations over a wider field, and equalize the losses in that way; and if to this could be joined regulations analogous to those of the factory mutual fire insurance companies, requiring, for example, that members should use nothing but double-thick glass in their greenhouses, a florists' hail-insurance company, at least, at such premium rates as those adopted in Pennsylvania, might perhaps, be made to pay expenses.

A RATHER significant fact is mentioned in *Iron*, which says that a contract has been made with a Belgian manufacturer for two hundred and fifty thousand dollars' worth of wrought-iron for the new Texas State-House at Austin. For several years, as it remarks, Belgian structural iron has been imported into Boston at the rate of from two to four thousand tons a year, and is sold at a rate of about two-and-one-half cents per pound, while the American structural iron costs two-and-three-quarters cents. As the imported iron pays a duty of one-and-one-quarter cents per pound, while the freight, commissions and brokerage amount to about a quarter of a cent more, it would seem that the rolled beams from La Providence and the other great Belgian mills must cost, on the wharf at Antwerp, about one cent per pound. Curiously enough, *Iron* dismisses the subject by mentioning that a combination of the labor organizations in Texas has been formed to drive out the foreign iron by the familiar methods of the "boycott," and that all skilled mechanics are expected to refuse to work in buildings in which it is used; commenting on the obvious way in which a boycott of this kind merely takes money out of the pockets of the workmen who think that they originate it, to put it in the well-filled purses of a very small band of iron manufacturers. We suppose most architects have marvelled at the disproportion between the cost of steel rails, which are sold by the thousand tons, beautifully finished, for a little more than a cent a pound, and that of the rolled beams which they use, and for which they or their clients are compelled to pay nearly three times as much. And when, as is usually the case, the disproportion is explained by the information that the makers of structural iron have a combination to keep up the price, we can imagine that many of them have thought it would be a happy day for the art of building when this combination should be broken down. But we doubt if any one, in his wildest moments, would have dreamed that the working-men in other trades, who contribute out of their wages a very sensible sum every year to cover the unnecessary cost of the fire-proof buildings in which the dry-goods merchants keep their cases of the calicoes which they buy of them, would be the first to struggle and fight, and deprive themselves and their families of bread-and-butter, to prevent any interference with the monopoly to which they pay tribute.

A SUDDEN inspiration seems to have come to the American Institute of Instruction, in the shape of a desire to do something to promote the improvement of school architecture, which, as it would appear, no one has ever thought of before. Reflecting, not without reason, that architects occasionally know something about making plans of buildings, it has come to the conclusion that its excellent purpose would be promoted by engaging the architects of the world, together with other experts, in a race for some glittering reward which should become the prize of the one who should solve most completely the problem which had occurred to the Institute. It is well known that considerations of ventilation, heating, lighting, and so on, often enter into the planning of schoolhouses, and the committee in charge of the matter has wisely decided that the details of all these matters must be carefully worked out in the competing designs, so that the victorious one may be complete in all particulars, including, besides all its provisions for "health and comfort, light, heating and ventilation," a "fair degree of beauty and ornament" on its "exterior." To combine "a fair degree of exterior beauty and ornament" with efficient provisions for the health and comfort of four hundred children, in a structure to cost no more than thirty thousand dollars, and to exhibit the solution of the problem in "drawings, plans and specifications," would give an architect of ordinary skill all the work he could well do in two months; but the Institute of Instruction, eager to reap the fruits of its idea, has limited to six weeks the time within which the competing "artists" must prepare their drawings and other documents, and submit them to the committee, so that experts of average skill, who wish to enter the race, must prepare themselves to work night and day until the allotted period expires. If any of our readers feel themselves disposed to gird up their loins for the struggle, we will encourage them by saying that they will have a fractional chance of being rewarded by a Grand Prize of sixty dollars.

SUPPOSING that ten of the racers endure the contest until the end, the value of each one's chance of securing the prize would be six dollars, out of which would have to be paid office rent and expenses while the "artist" was engaged at his work. Supposing one to be so favored as to have his rent and the salary of his office-boy paid by some one else, his compensation for the time and skill necessary to make a design as good as the best one would be one dollar per week, while that of his competitors who had to rely on their own resources for payment for a roof to shelter them while they were working, would be represented by a very substantial minus quantity. It hardly seems possible that a body of as much intelligence as the American Institute of Instruction should seriously expect people with any knowledge of the difficulties of the subject to notice such a ridiculous proposition. If it wishes to make a collection of the efforts of office-boys and tracers, who know no more about the details of lighting, heating and ventilation than they do of Hindoo cosmogony, it may perhaps succeed in getting together a few "designs" by "artists" of that stripe; but that the art of school-house construction is to be improved in that way is about as likely as it would be that a great advance in the science of teaching would be effected by inviting the college presidents of the country to enter a competitive examination for a position at the head of a new university, at a salary of ten cents a week. Some years ago a public-spirited gentleman, who understood thoroughly what he was about, established a competition for designs for a graded school-house, in which a prize of fifteen hundred dollars, if we recollect rightly, was offered for drawings involving but a small fraction of the thought and labor which the Institute of Instruction demands from its "artists." This inducement was found sufficient to interest men of real ability, and we think it may be said with truth that the result of the competition added considerably to the science of school-house planning; but it is simply throwing away money to spend it on farces like that now proposed, to say nothing of the ridicule which is thereby brought upon the subject and upon those who see fit to treat it in such a way.

THE School of Fine Arts in Paris has received from the executors of Madame Chenavard, the sister-in-law of the distinguished painter of the same name, a legacy of six hundred thousand dollars, together with some important collections of objects of art. The income of this splendid gift is to be devoted to annual prizes for the encouragement of the most diligent students in the School. The form which these prizes will take does not seem to be yet decided, but the name of Chenavard, which the deceased lady wished to have attached to the benefits afforded by her generosity, seems likely to become, for this reason, if for no other, one of the best known and most gratefully remembered in the history of art. Among the older prizes, the first to be awarded for this year, seems to be the Prix Duc, a money prize of eight hundred dollars, which was carried off by M. Adrien Chancel. Medals were awarded about the same time to MM. Bremond and Rey, and Normand and Salleron.

MURAL PAINTING.[1] — XII.

THE EDUCATION AND QUALIFICATION OF THE MURAL PAINTER.

Study for Paul Baudry's Ceiling, "The Glorification of the Law."

HAVING briefly reviewed the technics of mural painting, it will now be relevant to consider the education of the painter and his essential qualifications. Perhaps there is no more fruitful method of procedure than to analyze the training of the Renaissance giants, and to institute a few salutary comparisons between their development and that of modern men — especially of our compatriots. From what has already been expressed in these pages, the reader has doubtless drawn many pregnant deductions for himself; but, at the cost of repetition — for only by persistent re-iteration can we ever be heard — certain statements must be made. Much has been written, both tentatively and authoritatively, on the political, physical, and ethical conditions that are essential to the evolution of an artist. Some have maintained that art can thrive only within specified degrees of latitude and longitude. Some have defined the political conditions most favorable to its growth. Of these a few have stoutly affirmed that it must be fertilized by despotism — as if despotism could nourish anything necessarily so free and spontaneous as art! Others have attributed its triumphs to religious zeal. Doubtless race, climate, government, and religion enter, as ingredients, that subtle compound called art; but in just what proportions it would be impossible to state with accuracy. While we know that certain nationalities have shown a marvelous facility and disposition for the arts, while it is self-evident that under certain physical influences the practice of art is out of the question, yet it would be very unsafe to predicate what are the fittest environments for the artistic growth of civilized nations, especially in these days when modern inventions are rapidly levelling all the barriers that formerly isolated them. Eugène Müntz writes,[2] "In order to prosper, the arts exact a combination of circumstances the most complex, and no rigorous correlation can be established between moral, religious, or political development, and artistic production. The latter assuredly will always bear the impress of its surroundings, but its intrinsic value will result from very different causes. There are great nations, like England, that have never been able to form an indigenous school, and there are great epochs, like the French Revolution, that have not witnessed the birth of a single chef-d'œuvre."

It is frequently said that America is yet too callow to evolve an art. I do not believe it. If anything were to interfere with our artistic growth it would be the acceptance of so baneful and fatalistic a theory. Nothing is more depressing to the artist than to be told that his *entourage* precludes the realization of his dreams. When man is pioneering in the primeval forests he has neither such dreams nor the power to realize them. But the pioneering epoch was passed more than two centuries ago in some of our communities, communities that were established by the offspring of an old civilization. The Greek colonists of Magna Grecia produced artistic works of almost equal merit with those of the mother country; and in those days things marched slowly. Ages were then required for the evolution of a nation or an art; but recent inventions have unconscionably disarranged the time-table of the sages. Our older communities have begotten children that in a few decades have grown prodigiously. As yet they are somewhat crude and undeveloped, but ambitious and receptive. Far be it from me to nullify all that has just been said about the inscrutability of the mysteries that generate an atmosphere congenial to art, by effusively predicting a brilliant artistic career for America; but I certainly wish to demolish the counter-proposition. If freedom, youth, energy, wealth, amalgamation of race, variety of climate, and a rare eagerness to learn from others, argue anything, it is surely the life, not the death of art. The commercial spirit may at times offend, but it supplies the sinews of war, as it were, the boundless opportunities so stimulating and necessary to the production of great works. Commerce did much for the arts both in Venice and Florence.

However widely opinions may differ as to the relative merits of the modern educational systems, they must be comparatively unanimous as to their inferiority to those of Mediæval or Renaissance times. In those days the relations between master and pupil, as has been previously shown, were exceedingly intimate, the latter frequently living as well as working with the former, beginning at the foot of the ladder and working his way up to the topmost rung — if there was anything in him — passing through the successive mechanical and æsthetic stages, from the grinding of colors to collaboration with the master on an important easel or mural painting. The oft-quoted but precise words of Cennini — from which I have already drawn — give such a definite idea of the pupil's obligations that their insertion at length will be justified. "Know, that you cannot learn to paint in less time than that which I shall name to you. In the first place you must study drawing for at least one year; then you must remain with a master at the workshop for the space of six years, at least, that you may learn all the parts and members of the art — to grind colors, to boil down glues, to grind plaster, to acquire the practice of laying grounds on pictures, to work in relief, and to scrape the surface and to gild; afterwards to practice coloring, to adorn with mordants, paint cloths of gold, and paint on walls, for six more years — drawing without intermission on holydays and workdays. And by this means you will acquire great experience. If you do otherwise you will never attain perfection. There are many who say that you may learn the art without the assistance of a master. Do not believe them; let this work be an example to you, studying it day and night. And if you do not study under some master, you will never be fit for anything; nor will you be able to show your face among the masters." Again, he says, "Now then, you who, possessing noble minds, are lovers of this accomplishment, and who study the arts in general, adorn yourselves first with this vesture — namely, love, reverence, obedience, and perseverence." Such was the normal curriculum in Italy, and it will be seen that it strongly resembles that of Byzantium as described in a previous paper. It was an admirable common-sense system of education, and one that is more or less closely followed to-day by would-be lawyers, soldiers, architects, mechanics — by the students of every profession, except those of art. The pupil left the atelier thoroughly equipped. He was well-versed both in the material part of his art and in the science of picture-making according to the lights of his master. For some years he painted in the latter's style. The idea of what we call originality never entered his head. He was quite content could he slightly improve on some *motif* of a predecessor. Raphael's *Sposalizio* was inspired by Perugino's, but greatly surpassed it. After making several sketches for his *Entombment*, he finally adopted Mantegna's scheme, impregnating it with his exquisite personality. Small wonder is it that such works, the slow accretions of time and experience, were very beautiful. (It was just so in the days of the Greeks. A man died happy could he improve a moulding or a capital.) While executing his maiden commissions, the young artist kept his eyes open, drew from the paintings and sculptures of accredited masters, and travelled when his circumstances permitted. If he were intelligent and receptive he gradually emancipated himself from his master's style, as will every artist of ability sooner or later. The man who fears to be enslaved by his instructor, while following his behests, must be made of poor stuff. His artistic parentage may be revealed in the products of his brush or chisel, but why should he be ashamed of it? Do not our very faces betray our origin? Are we impeded in the race for life by our inherited experience? Do we not rather deem it so much gain, well pleased if we may add thereto our mite for the benefit of posterity? When art moves in well-defined channels its course is smooth and prosperous. The men of old had a definite purpose, knew whither they would go, and went there by the most direct route. To them the Renaissance was a tonic, not an irritant. The "Second Birth," the great "Awakening" meant liberty, not riot. The treasures of antiquity exalted, but did not intoxicate them; were used, not abused. The stream did not overflow; for its banks were high and solid, the influx gradual and controllable. But suppose the dikes had been less secure, and that tributaries from Egypt, Assyria, Persia, Japan, Greece, Byzantium, Arabia, Spain, France, Germany, etc., had suddenly poured their waters into the stream, what then? Would the artists have checked the torrent, or the torrent engulfed the artists? Something like this is happening here to-day.

It was shown in paper X that the transition from the easel-picture to the wall was an easy matter to the Renaissance artist. All their works were in the "grand style," whether on paper, panel, canvas, or plaster; so that as far as invention and design were concerned, scarcely any change was necessitated by their passage from the studio to the staging. Different technical conditions naturally exacted variations of technique, but not of conception. The line was occasionally and unobtrusively used — though much less than is commonly supposed — to define objects remote from the spectator, and to detach them from their environments. It was rarely apparent, as a line, in the best days. The figures and draperies were beautifully modelled ("finished," the layman would say,) and broadly, withal. Breadth does not mean, as some suppose, dash and coarseness; it means simplicity, suppression of the meaningless, emphasis of the broad and expressive masses at the expense of accidental, insignificant and belittleing detail. The astonishing part of Giotto's, Raphael's, and Michael Angelo's mural work — and in fact that of all the great frescoers — is that it looks well both near and far off. Every painter knows how difficult it is to effect this result, or, in the slang

[1] Continued from page 233, No. 542.
[2] Etudes sur l'Histoire de la Peinture, etc., Paris, 1886.

of the studio, to make a refined piece of work "hold" at a distance. The execution of the nude on the Sistine Vault is perfection — broad and careful, not in the least coarse or slovenly. The outlines, without being hard, are firm and eloquent, so that there is absolutely no doubt about the contour of a figure.[1] The same might be said of a hundred or more frescos of that epoch. In later, decadent days the work grew coarser, more summary and effective, and more scenic. *Bravura* took the place of heroic delineation. Modern decorators frequently paint too coarsely in the expectation that distance will mitigate the effect. Certainly, distance softens asperities, but the choice of handling should be guided rather by the degree of light than by the degree of distance. A blaze of light will reveal any undue rudeness of execution at a very considerable distance. A coarse and vigorous treatment would be far more legitimate and agreeable on a neighboring obscure wall than on a strongly-lighted one, many times more distant. These facts are strikingly exemplified on the stage. Every frequenter of the theatre, not purblind, must have been alternately disgusted and amused by the injudicious and stupid, though generous, application of cosmetics to the features of the *corps de ballet*, choruses, and supernumeraries (not to mention the superior officers); disgusted, because the effect under the tell-tale glare of gas and electricity is positively loathsome; amused, because these poor receptacles of pigments fancy, like the ostrich, with his head in the sand, that "nobody sees." Could they but imitate that long and strong-legged bird in deed as well as thought! Buffoons and clowns, failing to recognize the revelations of light, revolt oftener than they amuse the discriminating portion of their audiences.

To return once more to the Renaissance artist. We have noticed the community of style between his mural and easel work. The difference in technique was conquered in the atelier. Wall-painting was not only practised, but practised under the eye of the master, and subsequent collaboration gave the necessary confidence. Thus the pupil thoroughly solved the material mysteries of the wall. Mural painting presupposes a certain decorative proficiency and knowledge of architectural forms. These, too, the tyro acquired in the atelier. And here is another bond of union between their easel and wall pictures. Both teem with architectural and decorative motives. The Renaissance painters revelled in the suggestions of antiquity, and evolved countless combinations of column, frieze, pilaster, arch, arabesque, and garland from their inexhaustible fecundity. There was but one style of architecture — that derived from Rome — and they played with it in the full exuberance of their Italian facility. The functions of painter and architect were frequently interchangeable, and, as a result, their paintings were strongly imbued with the architectural feeling for structural harmony, and their architecture with a pictorial feeling for ornament. Their field was limited by definite bounds, and they could easily cover it.

In contrasting the training of the modern artist with that of the Renaissance, it is not my purpose to follow his career step by step, but merely to signalize certain significant variations. No one for a moment will suppose that any training however elaborate, can ever supply the deficiencies of nature. From childhood we have been told that the artist is born. This idea is so deeply rooted, that as a corollary to it, many illogically believe in the *laisser aller* system of education, *i. e.*, no education at all. It would be irrelevant to discuss here whether such a system could produce an accomplished landscape, or still-life painter, but I strenuously hold that it can never produce a figure, much less a mural painter. Monumental work must be grammatical. The phenomenal success of men like Michael Angelo, Raphael, Titian, or Rubens must be attributed in a great measure to the exact equilibrium maintained between their invention and execution. The predominance of the former marks the amateur; of the latter the professional hack. The curriculum of the mural painter is identical with that of the easel-picture painter, but must be supplemented with other exercises. Both should be thoroughly versed in the chemistry of their craft (which they are not); but besides the normally prescribed studies, the mural painter should be thoroughly conversant with architectural and decorative forms, as well as with all the material conditions that concern his department. In penning these lines, the American student is uppermost in my thoughts, though much that is here written is equally applicable to students across the seas. There are, however, unpretending schools in foreign lands, especially in Italy, that fulfill many of their technical duties to the would-be mural painter, as is evinced by the mechanical excellence of many monumental works.[2]

[1] Wilson, who had special facilities for examining the vault of the Sistine, says that these frescos excite admiration "particularly when observed from a distance of a few feet." "It might be thought that the vigorous draughtsman with some tendency to exaggeration of form, might exhibit a similar disposition in the use of the brush, but he painted in the soft Tuscan manner so much in contrast with his forcible drawing." "The heads and faces were painted with loving care and attention, the features being clearly outlined with dark, fine lines to insure distinctness when seen from a distance." "It was frequently Michael Angelo's practice to include portions of the background in his day's work; he evidently did so to insure softness of outline." At an altitude of sixty feet the "fine lines" were not noticeable, and the contours, though clearly defined, were not harsh.

[2] I can personally attest the excellent mechanical results of the instruction at the little school of Siena, which has doubtless its counterparts in other towns. I saw several of the advanced pupils practising on the wall of a little chapel in the Campo Santo, where their professor was frescoing. Owing to his courtesy, as already stated, I was permitted to experiment with them. Maccari, a graduate of the school, painted some first-rate frescos, in the *Sudario* at Rome, though less transparent, perhaps, than the old work. I refer purely to technique. We know that Italian art is not what it was, though by no means so contemptible as many would have us believe.

Very different with us are the relations between master and pupil, than they were in Cennini's day. Instead of an authority almost paternal on the one hand, filial obedience on the other, and an intimacy quite equal to that of kinship on both, there are ill-defined connections of the loosest description. Too frequently self-assertion and distrust on the part of the pupil is met by the master's indifference. This is a logical result of the temporariness of their contract. Pupils run after a teacher till fashion ousts him, and then follow the fashion. Constant change of master is exceedingly detrimental, especially in the earlier stages of development. Every new pedagogue has always something new to preach, and were the novelty that comes with every change the desideratum, the pupil would remain a pupil till death intervened. The master should be chosen in the first place with judgment and under advice; then his beneficent counsels should be allowed full time to bear fruit. When the foundation of his education has been solidly laid, the tyro will be less distracted by seeing and hearing strange things. The superstructure may be greatly embellished by precious fragments culled here and there. How the assimilative Raphael profited by the examples of Leonardo, Michael Angelo, Fra Bartolommeo and others in his first free years! Yet such influences might have only distracted him, and proved anything but beneficial when under the tutelage of Perugino. A young pupil is not capable of judging for himself, and, if a free agent, will change instructors with the seasons. There is little analogy between the discipline of our methodical professional schools and colleges, which turn out excellent material, and the elastic regulations of our anomalous art schools, which may be entered without preliminary requirements, and for a brief or protracted period. Few of the latter have any real hold on their pupils. The private ateliers are scarcely worth mentioning; they are chiefly recruited from the amateurs, and their whole tenor is unprofessional. It is the misfortune of many able artists that they are driven by necessity to take pupils without discrimination. The public or quasi-public schools have an irresistible attraction to the serious pupil in this, as in other countries; for centralization is the tendency of the day, and the greater the pity, since the fierce rivalry of the private ateliers is a wholesome stimulant to pupil and art, saving both from a dreary, official monotony. But while it is true that there is a general tendency to uniformity of method, to the foundation of large central schools moulded on a common model, and to the unintentional suppression of the private atelier; within those establishments there is anything but unity. Art schools differ so radically from other schools that there can be but little analogy between their respective polities. Discipline in both is essential, in order to inculcate the means of artistic or literary expression. But here the analogy ceases. The range of studies in the latter is so varied, that specialists are needed to interpret them, even did a limited number of pupils permit the supremacy of one instructor. From the very diversity of their specialties, these separate units work in harmony and form an homogeneous whole, either under the control of an individual, or body of men who give it the necessary stability. Though this polity obtains in a less degree in our art schools, nevertheless it obtains with a strong tendency to develop in the same direction. But in no department of human culture is the need of a dominating personality so imperative as in æsthetics. There should be no such thing as unbelief for the pupil in the earlier stages of his evolution, faith and enthusiasm being as essential to him as to the catechumen; without them consistent progress would be impossible, for there would be nothing to build upon. Consequently in matters of taste, and especially of interpretation, there should be but one supreme authority for the beginner. Is this generally the case? By no means; for we have one master for the life, another for the portrait, a third for the antique — purely arbitrary divisions of one and the same thing. (Or, perhaps, the pupil to benefit, as he fancies, by the advice of many, and to extract the little good he may find in each, goes to one day-school and another night-school.) To work in unison the masters must be offshoots from the same parent stem; but too often they hold antagonistic doctrines, which, however interesting and sound they may be *per se*, when preached in concert craze the poor pupil, who has not always the power to discriminate between differences that are real, and those that are only apparent. Nothing but doubt and perplexity can result from such conflicting tenets. Certain auxiliary studies, involving neither taste nor interpretation, as anatomy, perspective and the like, may be advantageously pursued with specialists; but such studies only. To make matters still worse these conflicting elements are often under the control not of one strong, confident character, who might give unity to a body even so heterogeneous, but of a committee (what an innate love we have to govern by committees!) which is often made up of conflicting elements, and not infrequently recruited from laymen, who, however conscientious they may be, are generally without convictions, and hence timid. So that to the evil naturally resulting from such a government is added a general feeling of instability and temporariness that unsettles and cools both instructor and pupil.

Another, and perhaps the greatest objection to the public-school system (and I must denominate all schools public that are not absolutely under the control of the artist-instructor, even though a fee be exacted), is the perfunctory nature of the relations between teacher and taught. No man, much less an artist, can advantageously teach those who are not in sympathy with him. He is congealed at once. No pupil can profit by the counsels of a master whom he disapproves —and young America does not keep his disapprobation in the background. The very traits that have raised him high in some pursuits,

have retarded him in the fine arts, where the discipline is lax, and the restraints insignificant. There is much in art that is the result of accumulated experience, and must be learned from the experienced, a fact very difficult for the scholar to comprehend. He is far too prone, owing to the lack of sympathy and confidence between himself and master, to be led by the few hectoring pupils that are found in every school-room, rather than by his preceptor. These conclusions may seem harsh and unflattering, but if true, why conceal them? The personal experience of many years as an instructor in a semi-public school, and of several in an atelier — not to mention the experience as a pupil—has forced me to them. Yet candor and affection compel me to state that I have met with a number of ardent and intelligent exceptions. The experience of others may not tally with my own; but these pages do not pretend to infallibility; and as knowledge is the result of all experience, I contribute my own, trusting that the complement may be forthcoming. This state of things is not peculiar to our own country. I should be very reluctant to disparage the French system of education, either on my own testimony, or on that of my compatriots; yet the following significant words from an eulogistic review[1] of Hippolyte Flandrin's mural paintings in Saint-Germain des Prés,[2] though published in 1862, certainly corroborate what I saw for myself a decade later, and what has very recently been reported to me by reliable students. "No more self-denial, no more modesty on the part of the pupils, no more devotion on the part of the masters; or rather there are no more masters and no more pupils. In vain I look for schools of painting; since we must be careful not to designate by such a name those school-rooms in which a greater or less number of young people are gathered about a sorry model, that they dare to call nature. There is no instruction worthy of a master in such places, no initiative, no action on the mind of the pupils, no community of work among them, no true affection, frequently, even, no sympathy in their way of seeing. There is a cold professor who passes among indifferent pupils doling out to them from time to time some common-place advice. Where are the great intellects about which other intellects, eager to learn, formerly clustered? Where is the benevolent guardianship of former days? Where is the docility, the devotion, the loyalty, of the pupils? Where is that communion of principles and ideas that created great works? The weak leave these pretended schools with a routine that soon chokes them, and from which the strong emancipate themselves with great difficulty. All await impatiently the hour of deliverance, happy moment when they can shake off the academic yoke, and open an atelier. . . . We forget too quickly that but a few chosen ones can raise themselves unaided into the higher spheres; that the taste and intelligence requisite to follow and comprehend the evolutions of genius are already rare, and ought to satisfy the ambition of men of talent, and that there is danger of being overwhelmed in attempting the course of Phæthon. Yet never has the practice of art, never has cleverness been wider spread; and all is dispersing in vain smoke, all is at the discretion of caprice and fashion. Never was so much spent for such small and poor returns.

"But if there are no more private schools where brains ferment, where theories freely clash, and from which works are turned out with passion to uphold sound or unsound ideas, at least we have official instruction. The palace of the School of Fine Arts is one of the most splendid in our capitol; there the reproductions of the *chefs-d'œuvres* of all ages are pompously displayed, and it is impossible that with so many elements of instruction men of taste and scholarly artists should not be formed. Besides is it not inadmissible that in a country so completely administered, where the Government controls celebrated schools, in which it fits its youth for all the liberal professions, the law, engineering, the army, and medicine, there should not also be a school wherein architects, sculptors and painters are formed? That is inadmissible; nevertheless, it is true. Official instruction in the fine arts exists but nominally in France; the walls of the school are admirably adorned, but within them the mind of the pupils remains empty. The professors—for there are professors, and very celebrated, too — . . . teach the scholars neither to sculpture nor to paint, still less to compose a group or a picture; all that doubtless counts as a mere accessory, and is learned perhaps outside. . . . There are [then] no longer doctrines rallying around illustrious master artists determined to work, fight, and give their lives for the defence and propagation of their ideas; nor is there a public school where the State makes good the loss of individual force. . . . Assuredly, 'tis a sweeter task to adorn a boudoir than to contribute to the majesty of a temple; but as decorative painting has had its being in all ages, as it is and always should be the true painting for masters, it is evident that art cannot be too much encouraged in this direction."

Apropos of French instruction, I have heard competent authorities bitterly complain that pupils too frequently denied their real master — some nameless, unribboned, worthy man of the provinces, perhaps — and entered for a brief period the atelier of a Parisian notability, merely to profit by his name and fame. How many artists — not from France alone — figure in dictionaries and catalogues as pupils of this or that celebrity, who would scarcely recognize them were they to meet! Yet these same artists are well aware that they owe everything to masters more devoted, more efficient, but less widely known; whose names, forsooth, must be suppressed, because they would make but dingy appendages to their own on the official list. The tails to their kites must be flexible, long, and sufficiently weighty to steer them upwards to success. Such denials render our catalogues practically useless for educational inferences.

Before dismissing this weighty question of the mutual attitude of master and pupil, a modern tendency very pertinent to it should be briefly noted, a tendency which Hamerton has emphasized in his comparison of the actual paternal and filial relations with those of the past, and that is the growing reluctance on the part of the parent —and I will add, master — to issue the word of command, trusting and preferring that the son—or pupil—may be prompted to the right by his own free impulse, or if to the wrong, that time and salutary experience may mend and more than mend the error. This is partly due to the reaction from the stern and disciplinary past, and is partly the result of certain social and ethical revolutions that cannot be discussed here. That this unwillingness to control the minor exists is very evident, and is not without its embarrassing consequences in the training of art students.

In considering the qualifications of the modern artist for the wall, we must not ignore his accomplishments—his fine and subtle feeling for nature; his marvellous faculty for rendering surfaces; his power of synthesis, of summarily expressing in a few telling, loose, and studiedly vague strokes, life, and earth and air; his power of analysis, that enables him to interpret almost photographically the minute details of tangled reality; his love for the effective picturesque; his delight in open air — all these faculties and feelings have made him a great landscape-painter, not as was stately Claude, with his formal arrangement of temple, tree, plain and mountain; or Poussin, or Salvator, but as a free and unconventional lover of rusticity. It may be questioned whether the out-of-door feeling — *la peinture de plein air* — is a great gain; whether the essence of it, all that could be assimilated by art, was not utilized long ago by the Italian frescoists, and the dross rejected; whether many great men did not, and do not still, avowedly reject the whole of it on high artistic grounds; yet whether these are facts or not, it may be safely averred that we are intimate with nature now as we never have been before, that our horizon is thereby vastly extended, and that our close and conscientious observation of man and his surroundings is a rectifying agent of inestimable value. The mischief is done when nature is made the end, not the means, an error we are too prone to commit; yet mistakes and excesses, much as we may deplore and endeavor to avoid them, are the almost inevitable concomitants of all great revolutions. For our consolation let us bear in mind that epochs of realism have usually preceded still greater epochs of—I will not say idealism, for that word, first-rate though it be, is just now in disrepute — but of art. Something great will surely be the result of our daily friction with nature. By a closer study of it, Giotto, the great reformer (1276–1337), shattered the hieratic conventionalism of Byzantium, and regenerated an effete art, which, now ebbing with his stolid imitators, now calmly manifesting itself in the beatific but exceptional inspiration of an Angelico (1387–1455), now rising again with artists who turned once more to Nature, such as Massaccio (1401–1428), Donatello (1386–1468), and the brothers Van Eyck in Germany (from 1366 to 1441), finally culminated in the glorious age of Leonardo, Michael Angelo, Raphael and Titian. Who cannot remember, on painted wall or panel, the sweet, pious, naive, *every-day* faces of winged angels (those of Benozzo Gozzoli [1420–1497?] for instance), that lend them that ineffable, childlike charm; or the life-like burghers, passive spectators of some great drama; or the animated busts of heroes and scholars, characterized even to ugliness; or again, the spare legs and spider-like arms of a David or a Precursor? Yet all this realism was tempered by an inherited aptitude and respect for design and composition, as well as by a passion for the antique. Following this modified realism came the generation of the demi-gods. Never was there a nicer adjustment between the real and the ideal; and how difficult this adjustment! One step too far from the real — or rather the vulgar real — and there yawns the chasm of conventionalism, into which the successors of the demigods plunged. These god-like men give us the type rather than the individual, except in the portrait (and even this is monumentally simplified); chosen, not haphazard forms; nature, at her best, but always, always, nature. However ideal the forms may be, they are founded on some suggestion, even though slight, from nature. One has only to look over the portfolio of a Raphael to be convinced. A little sketch from a fellow pupil will blossom as an exquisite angel; some bald-pated, ill-looking acquaintance, as a stately philosopher; yet neither saint nor philosopher would have that life-like ring had they been evolved purely from the imagination, and certain vital characteristics been ignored. This constant reference to nature saved these great painters from the cold, plastic academism of later days, while their idealism, which is nothing more at its best than rendering nature, in her choicest garb, rescued them from the naive, unselected, and sometimes amusing individualism (which had its charm) of their predecessors. At the same time it made them the monarchs of monumental painting, which despotically exacts, ennobled, purified and rhythmical forms.

And what does our unconventional rusticity, or our supreme faculty to immortalize the meanest thing in its meanest garb avail us for the wall? What our boasted neglect of balanced form and beauty of line for an art that especially calls for equilibrium of mass

[1] A. Gruyer, *Gazette des Beaux-Arts*, *Mars*, 1862. See also, a brochure by M. H. Lecoq de Boisbaudran, entitled, *Coup d'œil sur l'Enseignement des Beaux-Arts*. Paris, 1872.

[2] The medium used for these paintings was the *huile ciré* (oil and wax) invented by Baron Taubenheim.

and harmony of contour? Of what advantage is picturesqueness to the artist whose chief aim is to avoid the accidental? Wherein does looseness of handling, or the broken line benefit the man who is ever striving to express himself with decision? For definition is as essential to mural painting as the omission of it is to the truthful rendering on canvas of variegated earth, mobile water, and glistening air. What does our photographic translation of nature's complexities bring to monumental interpretation, which enforces suppression of detail? Our out-of-door sympathies give us one thing — light; for though decorative painting must always conform to its surroundings, which often necessitate rich and low-toned harmonies, yet, as a rule, circumstances more frequently exact light and airy, than heavy and sombre tones. Nevertheless it is the stern duty of monumental painting, even in rendering out-of-door effects, to suppress the countless, incalculable, and often confusing eccentricities of direct, reflected or diffused light, and to give a strong — perhaps stronger — impression of *plein air*, by a discreet elimination.

Thus the studio practice of the modern artist aids him but little when he transfers his talents to the wall. He *may* have been thoroughly exercised in monumental composition, but the chances are against it; neither has his school nor subsequent practice acquainted him with architectural and decorative forms. His knowledge of the chemical and physical changes to which colors are liable, of the constructive details and necessities of walls and plaster is absolutely *nil*, and his technique is diametrically opposed to that of mural painting. As a rule, his sporadic efforts on the wall have not been crowned with success; for they have either borne the stamp of vast easel-pictures, or, as previously observed, have overstepped the mark, and been characterized by an almost primitive rudeness.

I cannot refrain from quoting here some very pertinent lines by Eugène Müntz (*Etudes sur l'Histoire de la Peinture*, Paris, 1886): "It is to the *amateurs* that the modern painters address themselves; it is by the refinements of drawing and coloring that they captivate us, rather than by the depth of their convictions. Individual fancy has replaced those emphatic rules that furnished to early Christian as well as to Mediæval art the motive of its being and its striking air of necessity." When it is remembered that the very best men in those days decorated church, palace, and public hall, while our best men paint for collectors, the sympathy between the former and their public, and the lack of it between the latter and our public can readily be comprehended.

It may be supposed that a special training, less long, less laborious, and more special, might with advantage be substituted for the ordinary routine of the art-student. Perhaps for the lower and more mechanical phases of decoration, yes; but not for the monumental painter, or for any decorator who hopes to stamp his work with his own personality, or to add one jot to pre-existent knowledge. The uninspired and shopworn decorative work—figure, floral or geometrical—that passes muster as art, is too well known to require elaborate condemnation. It is enough to say that such work is the result of a special, mechanical training, unsupported by those severe and laborious studies from life and nature which are the only true and possible source of fresh inspiration. There is no short cut; the decorator must be as conversant with vital form and color as the painter of the easel-picture, if he expects to create. That these studies, as usually conducted, can be amended and supplemented is true enough; for they are neither all-sufficient, nor at times rational; yet, as I have before observed, it is not my purpose, at least for the present, to examine seriatim the educational methods now in vogue. There is, however, one defect in them so apposite to the matter in hand that it cannot be blinked. We all know how much time and ingenuity are spent on elaborate life-drawings. Such exercises in moderation are not fruitless; yet many a clumsy hand can stump or scrub his way up to a highly-finished representation of the cast or life with a week's labor, who cannot possibly translate the same in a few suggestive, logical and inerasable lines. In other words, such work, however useful it may be, is not enough, and unless fortified by other exercises, it would never teach a pupil to draw.

From a Drawing by Raphael.

Now what the mural painter most needs is the power to delineate objects, at rest or in action, promptly, broadly and intelligently. He must not only be able to portray what he sees, but he must *know* what he sees. His sketches must be rapid and to the point, his final drawing and brushing decisive and significant. His life is too short for tentative outline or modelling. Those wonderful drawings, the legacies of the old masters, tell the whole story far more eloquently than I can. Besides these things, they teach us that the faculty for representing objects, animate and inanimate, from the imagination should be cultivated. Not only is this faculty requisite in order to improvise, to fix on paper or canvas the "first thought," untainted by models, but very frequently, also, to supply their deficiencies and limitations, both as to form and action. An artist who is dependent on his model for suggestions cannot hope to excel in an art whose corner-stone is

"The Glorification of the Law." Ceiling by Paul Baudry.

fertility of invention and expression. The model is but the means — the precious means — that saves us from wearisome, stereotyped conventionalism. And what shall be said of the use of the photograph as an auxiliary? Assuredly, it has its purposes; but that will be a fatal day to artistic expression, when the photograph supplants skilful and inspired draughtsmanship, and becomes the symbol of our impotence.

Would it be an act of supererogation to say that the mural painter should assiduously glean fresh suggestions from nature? that he should stock his sketch-books with memoranda of artistic expression, as well as with the countless and unexpected revelations of the life about him? that his memory should be an encyclopædia of decorative motives? Would it be superfluous to state that he should be gifted with imagination, with the power of seeing clearly, simply and beautifully, heroic compositions, and that he should be born with a feeling for rhythm? Is there need to emphasize the necessity of familiarizing himself with the immortal works of the great decorators? For in truth there are no masters equal to those whose reputations have been consecrated by time. Without some knowledge of them no education is complete. Those who can, should travel intelligently and observantly, in the land of mural painting—in Italy. It is discouraging to think how many of our students halt in Paris, at the portals of that fair country, rich in artistic treasure; or if by chance they visit her, draw inspiration merely from her superficial picturesqueness. None better than the French themselves recognize the supreme importance of a careful study of the great Italian decorators. Did not Bandy live with them before girding himself for his life-work in the Opera? Did he not fortify his natural talents by their example, without in the least enslaving them? And, finally, it is but too evident that men who are suddenly called upon to suggest fitting themes for given places, widely differing in their purposes, should enrich their minds, if not with many — and the more the better — at least with a few, well-chosen, literary masterpieces. Good literature promotes good style.

In no department of the fine arts have professionals studied and practised more intelligently and successfully than in that of architecture. The very nature of their work has constrained our architects to pursue a methodical course of instruction. They have profited by the lessons of the past, without being trammelled by them, and have proved that a respect for tradition is not prejudicial to consistent development. They have distinctly added something to art, and to our honor be it noted that their efforts have just begun to attract the

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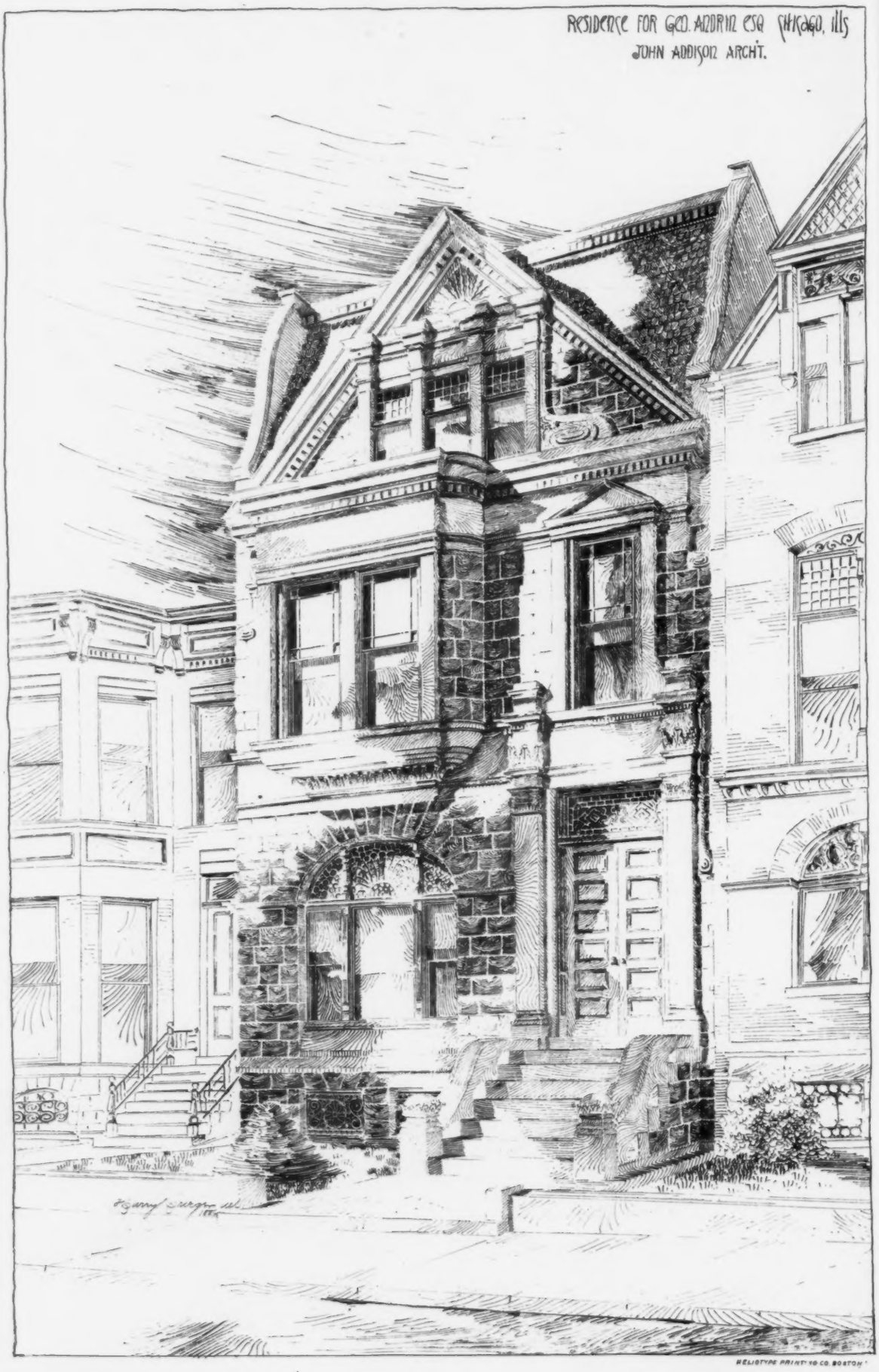
JOHN ADDISON ARCHT.



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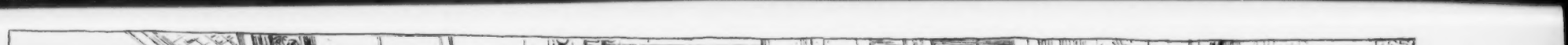

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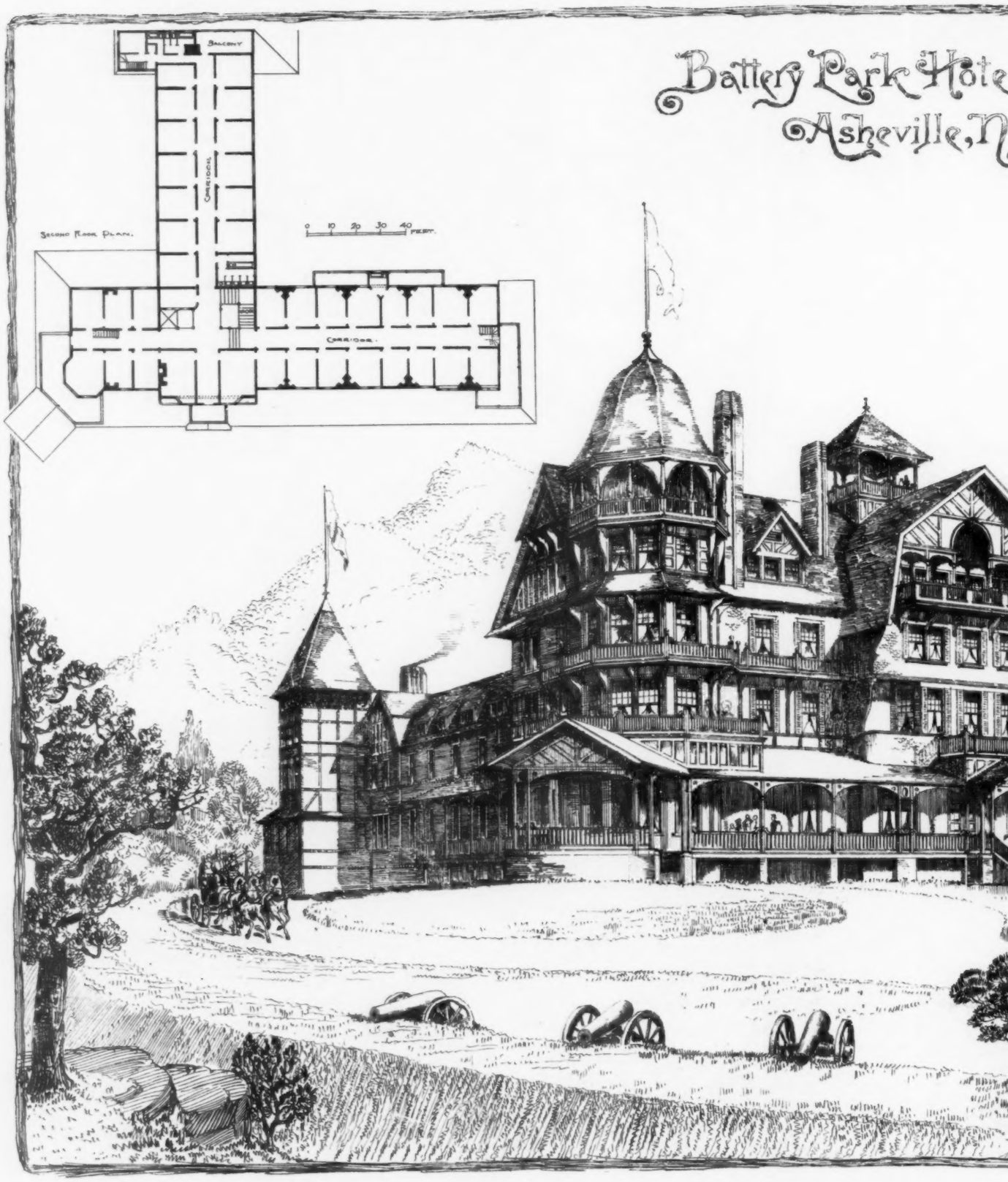

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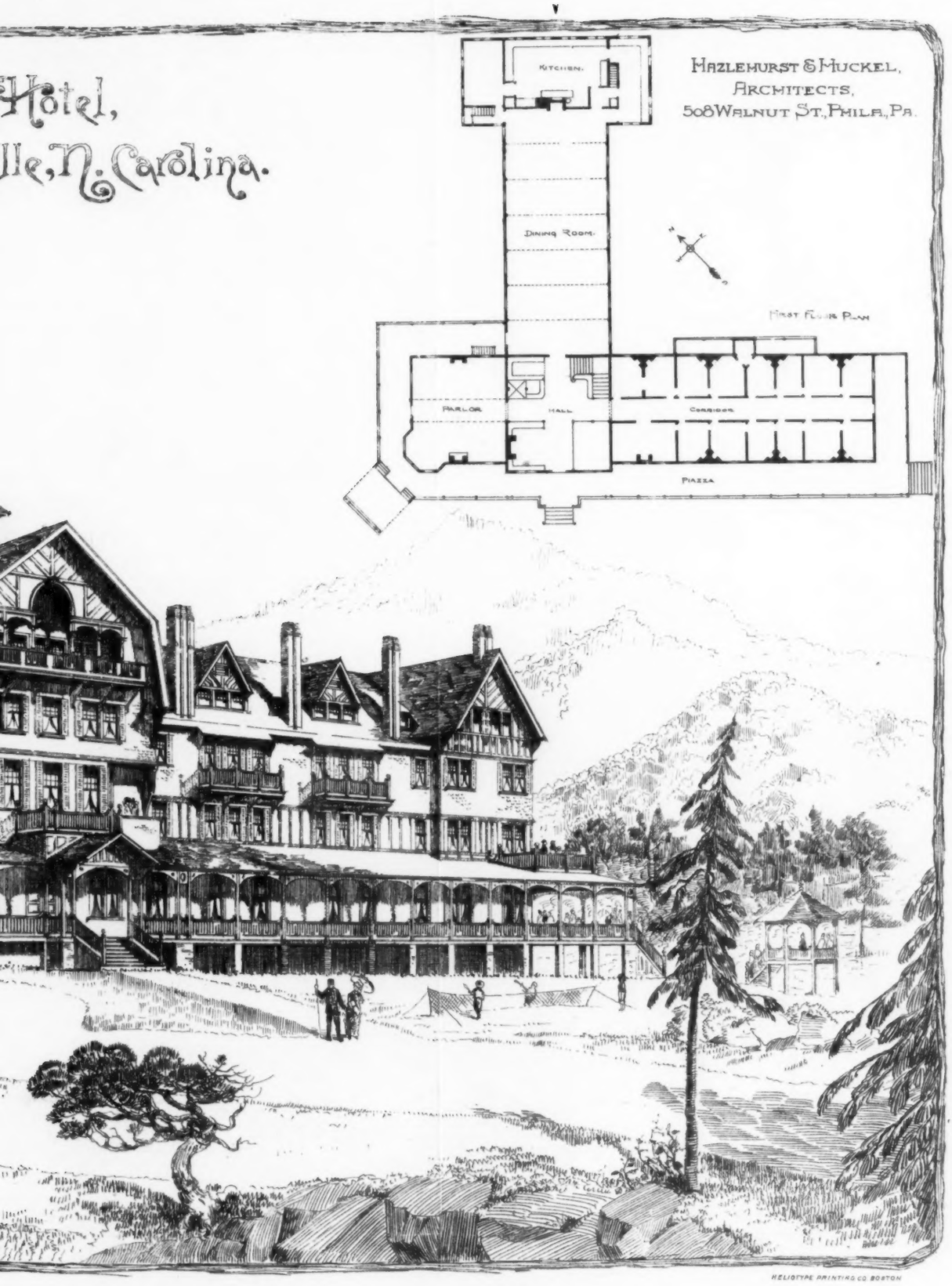

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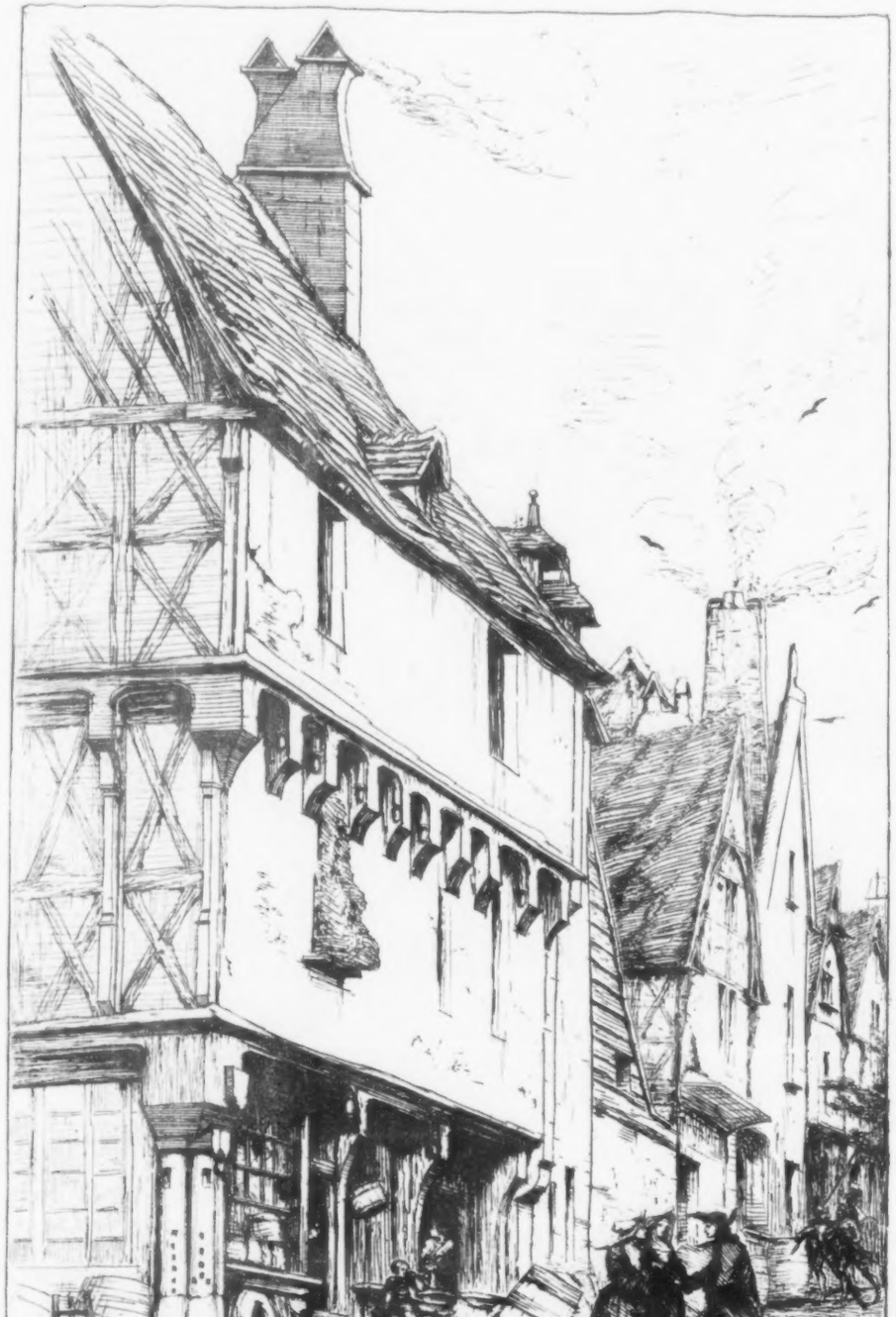
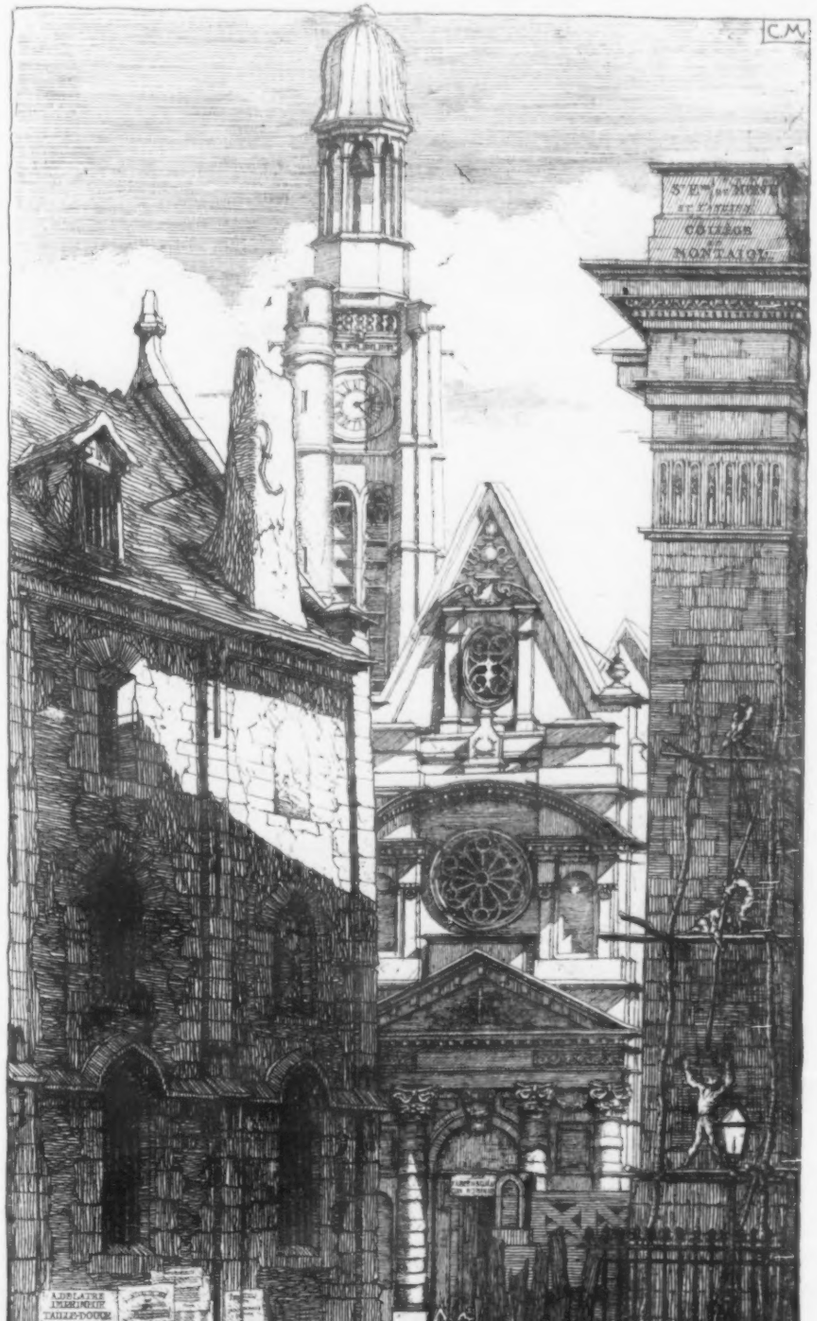
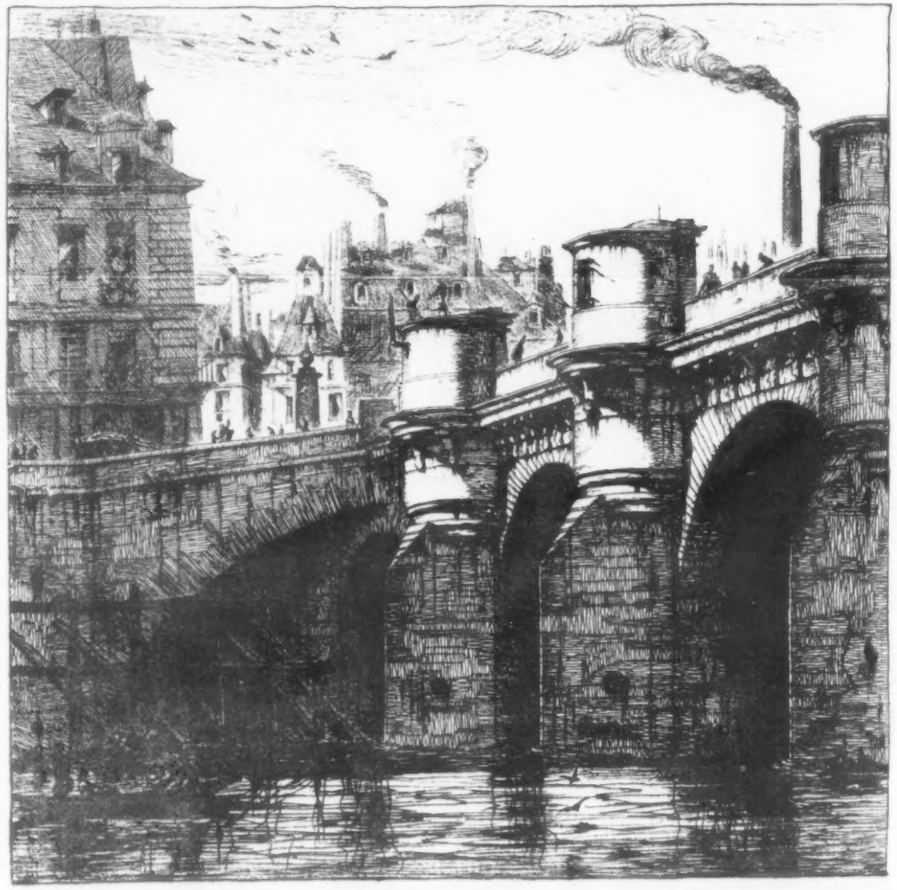




Old House at Bourges.

St. Etienne du Mont.



The Pont Neuf.

Etchings by Méryon and Portrait of Méryon by Bracquemond.

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merited attention of their foreign *confrères*. Not that they are always guiltless of solecisms and eccentricities; not that they have yet adapted themselves satisfactorily to their bewildering environments; nevertheless they are working systematically in the right direction. Their brothers of the brush may well take a hint from their methods if they hope to keep pace with them. On the other hand the architects can do much to encourage the painters, and at the same time adorn their own art by giving them the opportunity that church and state gave in past times, and in other lands whose greatest pictorial triumphs have been on the wall. We may, for the nonce, be ill-provided with practitioners, but the occasion will surely raise them. If the training, aims and technique of our artists do not particularly fit them for monumental painting, these can readily be amended without antagonism to the spirit of the age. There is no reason why we should not greatly profit by our newborn aspirations and methods, if they be consistently controlled and developed; for the field of art itself and the means of expression have of late years been greatly enlarged. Our feeling for refined and delicate combinations of color, for instance, or, more succinctly, our tone perceptions (acquired, perhaps, from the Eastern nations, who have always been gifted with them), are infinitely more sensitive than they were in mediæval or Grecian days, and are a great addition to our artistic repertory.

No one can have failed to note the great and increasing sympathy for decoration that obtains to-day; misguided and illiterate at times, imperatively exacting the new-fangled products of artist and artisan, morbidly craving startling combinations, yet withal genuine. This untutored demand and supply, this yearning to satisfy untrained desires, may account in part for the dangerous tendencies of our decorators, to glorify the material at the expense of art. The Greeks took care to make their Venuses beautiful; we should do well to follow their example. Barbaric splendor can never be a fit substitute for art. May we soon, too, throw off the malarious garb of "æstheticism" that we have borrowed from our cousins across the seas, who, in turn, borrowed it from a dead past; for however well it may become them, it is not for us. Strange that a young and vigorous people — a people that avowedly abhors the unreal, that professes a sincere cult for wholesome nature — should people their canvases with such sickly creations! Yet, notwithstanding these defects — and they are defects — I feel inclined to hazard the same remark about our decoration which I made with confidence on our architecture, that in certain departments of it, at least, we have added something new to art.

No effort has been made in these papers to draw the line of demarcation between monumental and the lower phases of decorative painting, since they fay into each other. The latter, moreover, are the almost constant auxiliaries of the former, and the same brain must conceive, even though the same hand does not execute both. If expense, perchance, should not always permit the gratification of our taste for painted epic, we can at least indulge in less lofty, but thoroughly artistic and grammatical prose.

FREDERIC CROWNINSHIELD.

Entombment of St. Catharine. Fresco by Bernardino Luini. 1460–1530.

THE ILLUSTRATIONS

[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

STOCK EXCHANGE, CATHEDRAL AND CITY HALL, BREMEN.

[Gelatine print issued only with the Imperial and Gelatine editions.]

IN the above reproduction the positions of the Stock Exchange and City Hall have been transposed, owing to the process employed. In reality, the Stock Exchange is at the right, and the City Hall at the left, of the Cathedral.

OLD HOUSE AT BOURGES, ST. ETIENNE DU MONT, THE PONT NEUF. FROM ETCHINGS BY C. MERYON. PORTRAIT OF MERYON, FROM AN ETCHING BY BRACQUEMOND.

THE three etchings by Méryon here reproduced formed a part of the remarkable collection of his works lately gathered together by Mr. Frederick Keppel, the well-known print dealer. They were exhibited for some time at his gallery in New York, and then transferred to the Boston Museum of Fine Arts, where they remained several weeks. We are indebted to the courtesy of Mr. S. P. Avery, of New York, the owner of the prints which we have copied, for permission to reproduce them.

The head of Méryon, curiously etched in imitation of an antique medallion, was done by his friend, the accomplished etcher, Felix Bracquemond, in 1852. The verse beneath is of Méryon's own composition.

The quaint old house at Bourges is said to have been built by a musician who had made his fortune. At its angle may be seen a triple pillar carved in the form of a flageolet.

In the plate of St. Etienne du Mont the old building on the left is the ancient College de Montaigu (long since pulled down), while on the right is seen part of the wall of the Pantheon.

The partial view of the Pont Neuf was etched in 1853. The tall chimney is that of the mint. The semi-circular structures on the tops of the turrets, apparently used for commercial purposes, have disappeared since Méryon's time,

Charles Méryon was born in Paris, November 23, 1821. He was the illegitimate son of an English physician and a French ballet dancer. A nervous and delicate boy, he seems to have owed all the little happiness that his life possessed to the affectionate care of his mother, whom he unfortunately lost at an early age. His father gave him nothing but his name. Méryon having acquired a taste for the sea chose that as his profession, and at the age of seventeen entered the naval school at Brest. Two years after he sailed on a French ship for a voyage in the Mediterranean as a cadet, sketching at the various places they visited and studying some time in Toulon under Cordouan, a well-known landscape painter. Later, having been made a lieutenant, he joined the sloop-of-war *Le Rhin*, in which he circumnavigated the globe. While in New Zealand and New Caledonia he made many drawings of the scenery and natives, of some of which he long afterward executed etchings intended to illustrate a book of souvenirs of the voyage. After the cruise he returned to Paris, and fearing that his health was not strong enough to sustain the hardships of a sea-fearing life, he resigned his commission in the Navy, took a studio in the Latin quarter and began to study painting. Finding, however, that a partial color-blindness would prevent him from ever succeeding in that branch of art, and his attention being directed to etching by Eugene Bléry, the engraver, he studied the art under him for some months. His real master, however, was Reinier Zeeman, a Dutch etcher of the seventeenth century, whose views of the Paris of his time, some of which Méryon copied, led him to undertake his great work "*Eaux-Fortes sur Paris*," which he began in 1850 and worked on for several years. Méryon was a Mediævalist. He loved the picturesque old buildings and streets which were then still existing in Paris and perpetuated in these etchings what Baron Haussman, by command of Napoleon III, was ruthlessly demolishing to make way for his formal, if handsome, modern boulevards. Méryon's work was done amid many discouragements — poverty, neglect and contempt. At the Imperial print-room in the Louvre they knew him not, the publishers would have none of his works, the jury of the Salon refused them admission and he was forced to leave them for sale in the little shops in the Latin quarter. A few critics and artists — Theophile Gautier, Philippe Burty, Seymour Haden — saw and appreciated their wonderful qualities, but the public passed them by. For a set of the Paris views which are now worth hundreds of dollars he asked thirty francs. It is the story of Millet again, with a sadder ending, for, worn out with suffering and weakness, Méryon's brain gave way and in 1858 he was taken to the insane asylum at Charenton. The next year he was released and began work again, but not with the old strength. Signs of an imagination no longer under control are to be seen in the plates he did at this time. He grew morbidly suspicious of his few friends, quarrelled with and insulted them, and refused their well-meant assistance. In a fit of despair he destroyed many of his plates. At last, he was, for the second time, placed under confinement in 1866, again at Charenton, where this great poet-etcher died on the 14th of February, 1868. A melancholy incident has connected the miserable fate of Méryon with a rising and opulent city of America, the chief in the golden State of California. The course of his malady had been much hastened by obstacles encountered in producing an enormous etching of a view of San Francisco in 1855. It measured 39 x 9½ inches and was much the largest of his works. It was a commission from two French bankers who paid him but $240 for it. They furnished him with five small daguerreotypes to work from, which troubled him greatly, they having been taken at different times of the day with different lightings.

Mention should be made of the fantastic verses, composed and etched by himself, with which Méryon often enriched his plates. We give a free translation from Mr. Keppel's catalogue of the first verse of several which he attached to his plate of "The Morgue":—

"Stay, ye passers by!
Here, like a charitable mother,
The city of Paris
Grants always to her poor children
Both bed and table gratis."

Like William Blake he imagined that he saw visions which he tried to describe in his poems and etchings; but the English artist married, lived happily, and died full of years, while Méryon knew

no joy save in his art. Méryon executed ninety-seven plates, a number of which are small and unimportant. His master-piece is considered to be the "Apse of Notre Dame." Among his finest etchings are "The Morgue," "The Pont au Change," "The Rue des Mauvais-Garçons," and "The Turret in the Rue de la Tixeranderie." The great Cathedral of Notre Dame dominated his Paris plates, for, like Victor Hugo who greatly admired Méryon's work, he saw in it the embodiment of the Paris of the Middle Ages. All Méryon's architectural etchings are tinged with this same mysterious and sombre spirit. One of the most curious shows the figure of a demon, one of those which are carved in stone at the angles of the towers of Notre Dame. This hideous horned and winged creature rests his head in his hands and looks fixedly at the panorama of Paris which is spread out before him. Four black ravens are flying about, and on the left is seen the tower of St. Jacques, while all around stretches a vast expanse of roofs and chimneys. Hamerton describes this demon as gloating with satisfaction over the sin and misery which he has witnessed in the great city, since he took his place high up on the cathedral hundreds of years ago. This plate is called "The Stryge." Another example of the unreal quality which entered so largely into some of his plates is in "The Pont au Change," where in the evening sky a flight of albatrosses soar above a flock of wild duck. It was a fancy of Méryon's, Burty says, "that at the close of day, eagles and other birds of prey were let loose from the Tuileries, whose threatening flight carried trouble into the peaceful minds of the citizens, and recalled to them the triumph of the *coup-d'-état* of 1851." He often worked over his etchings, and changed them in many details. One state of "The Pont au Change" is without the crescent moon or the birds mentioned above, but has in their place a large balloon, inscribed "Speranza," which rises majestically in the air amid the acclamations of the crowd on the bridge. "The Palais de Justice," superbly drawn, occupies the right of this plate, while beyond the bridge is seen the picturesque pump of Notre Dame, a favorite subject with Méryon. The beautiful effect of sky in this etching is the finest which Méryon ever produced. Other wild fancies of his are seen in the plate of the building of the Ministry of Marine, where the air is filled with monstrous flying creatures, half marine and half ærial, and in his bird's-eye view of the College of Henry IV, where part of the work is exact, and the rest quite untrue to the facts. He mingled in the clouds which sailed above some of the buildings which he drew with the keenest perception, and the most unerring draughtsmanship, fragmentary episodes of his tropical voyages and reminiscences of ancient mythology. His gloomy cast of mind is seen in "The Morgue," where on the bank two men are carrying the corpse of some poor drowned wretch towards the steps leading to the morgue, and to which a *gendarme* points. The victim's wife and child are sobbing bitterly, while a curious crowd watches from the wall above.

Yet Hamerton truthfully observes, "He had great subtlety and delicacy of observation, and a perception of truth so clear, that it is strange how such bright insight can have been compatible with any cloud or malady of the kind." Again, he says, "His work was sanity itself, by its perfect and equal acceptance of various facts, by its patience and steadiness in study, by its caution and moderation in manner. As an etcher, Méryon was remarkable for great certainty of hand combined with extraordinary caution. When at work from nature he stood, and without support of any kind, held both plate and mirror in one hand, laying the lines with the other, and so steadily that the most skilful etchers marvelled at his skill." Burty says, "He had been noticeable, when in the navy, for his finely-made, yet strong hands. His keenness of sight was remarkable. He could distinguish the finest architectural details in a building as well as if he had used a telescope. His plan of working was this. He seldom made a complete drawing on the spot. He fixed on his subject, and then he went patiently every day at the same hour, and drew on small pieces of paper studies of the various portions, rigorously exact in their details. These he either stuck together when he returned home, or else made a drawing from them."

Hamerton's verdict is that Méryon was "the most accomplished architectural etcher, not only of this century, but of all centuries; not only of France, but of the world."

BATTERY PARK HOTEL, ASHEVILLE, N. C. MESSRS. HAZLEHURST & HUCKEL, ARCHITECTS, PHILADELPHIA, PA.

The building is now in course of construction, and is to be completed this summer for occupancy. It is both a winter and summer hotel, all rooms having open fireplaces, and the building being heated throughout by steam. In size it is 200 feet long in frontage, and 170 feet deep; average width, 52 feet 6 inches. The tower, which is at the angle overlooking the French Broad River, is 150 feet high, and has an extended view, both up and down the valley, of over 200 miles. The location is on a knob of the Blue Ridge, on what was, during the late war, the site of Battery Porter, the old earthworks having to be removed to make way for the present building. The altitude is 2,800 feet above the sea, on the line of the Western North Carolina Railroad. There are one hundred and fifty chambers, and accommodation for four hundred to five hundred guests. The dining-room is 40 feet by 90 feet, clear of all posts or columns. The building is provided with steam, elevator, and lighted throughout, with Edison electric light. The owner is Col. Frank Coxe, of Philadelphia. Cost, $100,000 complete.

RESIDENCE OF GEO. ANDRIN, ESQ., CHICAGO, ILL. MR. JOHN ADDISON, ARCHITECT, CHICAGO, ILL.

HOUSE AT JAMAICA PLAIN, BOSTON, MASS. MR. FRANCIS CRAIGIN, ARCHITECT, BOSTON, MASS.

LECTURE ON ARCHITECTURE.[1] — II

"Architecture has been called petrified music, and its highest excellence said to be the achievement of harmony of proportions among harmoniously selected or invented elements. But every art, as we have seen, is entitled to claim for its master works its ideal manifestations, the praise of harmoniousness, and thus to have a like claim to an analogy to music. When the sculptor designs a group of which the masses and the lines present themselves to the eye in such relations that our attention is delightfully detained and travels over the work and returns from one comparison to another, we are conscious of the same sense of harmony as when we are led by music through many a winding bout,— "of linked sweetness long drawn out." As the painter realizes his ideal and brings his work to a close, he is conscious of his tints, his lights, his forms, his distances falling at last into due relation, and "conquering in a full and natural close — like music."

Architecture, however, has this special analogy to music, that the elements by combination of which it produces a sense of harmony, are susceptible of being brought to the actual test of numbers. The painter relieves one color by another under guidance of his eye — of his sense of color-harmony; there is no doubt that his harmony does ultimately depend upon a certain quantitative proportion, but what this is defies analysis to define and determine. On the other hand, though the violinist, in tuning his instrument, trusts to his ear as exclusively as the painter to his eye, it remains a fact that the latent cause of the harmony established between two strings depends on a certain proportion between their rates of vibration, a proportion which may be brought to an absolute numerical test. The relative lengths, weights, and tensions of the strings which are in tune together may be accurately determined as governing the result by a definite law; and in the same way, the elements of architectural harmony are susceptible of measurement; and, as we shall find in the case of admittedly the most harmonious example of Greek architecture, declare themselves as owing allegience to certain definite principles. In music we deal with the proportions of audible sounds, which may be expressed numerically; in architecture, with the dimensions of space, which may be determined by rule and line. The best preparation for appreciating what I have to lay before you in the next letter as to the practice of the best Athenian architects in effecting that harmony of proportion which has been the delight and marvel of all beholders for ages, will be to set forth in the first instance the value in art of precise proportions — of definite proportions — of proportions between comparatively low numbers, as certified and exemplified in music. This is the more desirable as it will enable us to perceive not only the agreement of musical and architectural harmony in principle, but to preclude that liability to press this agreement into applications which the contrasted conditions of the two arts repudiate.

So, also, we may clear the mind of a false assumption as to the function of schemes of architectural proportion. No one supposes that a musician composes a movement by a process of calculation from the proportions of his scale, and as little that his imagination works without allegiance to the laws of thorough-bass. And so it is that familiarity with the nature of proportion will not enable an architect to evolve the beautiful as he might solve an equation in algebra, but may stand him in good stead nevertheless.

Whether two notes harmonize, are perfectly or approximately consonant, as sounded consecutively or together, depends upon whether the vibrations which severally produce them have or have not certain periodical coincidences — the more frequently these coincidences recur the more complete is the consonance; and then, on the fact whether the ratio of coincidence is in terms of the simple integers 2, 3, and 5, the lowest of the prime numbers, or their multiples, to the exclusion of the next lowest prime numbers, 7, 11, and 13. When to these we add the third fact, likewise determined, not *ápriori* but by direct experiment and experience, that double the number of

[1] By W. Watkiss Lloyd, read March 4th at Royal Academy of Arts, Burlington House. Sir Frederic Leighton, P.R.A., in the chair. Continued from page 246, No. 543.

vibrations in the same time — that is, the coincidence of every second vibration only—reproduces the same note at a different pitch, as expressed by the ratio 1 : 2, it is a mere matter of tabulation to bring out the proportions of the notes of both major and minor scale as a necessary remainder. If we write out a scheme of all the simple numbers combined in pairs, and strike away first all duplicates, and then all in which 7, 11, and 13 are factors, we shall have the musical scale as a residuum. Why two sets of vibrations, of which every seventh of one coincides with every eleventh of another, or every eighth of one coincides with every thirteenth of another is not agreeable, I believe, is capable of explanation, but cannot now be discussed; it may suffice to know, that because such is the matter of fact as regards musical notes, it by no means follows that such proportions are inapplicable in architectural details, as may not occur in the combinations of chemical atoms. It is unnecessary to say that the scale which is thus brought out lays no hampering restrictions on the musical composer. By a simple principle that may be expressed in a short sentence — it divides itself — into a major and a minor scale; and every note in it may become in turn an original key-note, and propagate again a new series of notes and new arrangements of major and minor scales.

Before quitting the consideration of musical proportions, it is desirable to notice those combinations of three notes which are termed chords; the principle of the consonance of these will be found to illustrate by analogy those architectural adjustments — at least of the Greeks — which involve three associated dimensions, as, for instance, of height, length, and breadth.

The vibrations which produce the several notes of a perfect chord in the major scale, have the proportions 4 : 5 : 6; so that the difference between any two is unity 4 : 5–5 : 6 and 4 : 6–2 : 3.

In the inversions, one pair exceeds this difference, viz., when the vibrations of the three associated notes are coincident in the numbers 3 : 4 : 5 in which 3 : 5 has the difference between the terms of 2; and so again in the numbers of the second inversion, 5 : 6 : 8, 5 : 6 and 6 : 8 = 3 : 4, but 5 : 8 has a difference of 3.

The perfect chord of the minor scale present the series of less simple numbers, but having the same characteristics, 10 : 12 : 15 = 5 : 6–4 : 5 : 10 : 15 = 2 : 3.

The inversions, 12 : 15 : 20 = 3 : 4–4 : 5–3 : 5, and 15 : 20 : 24 = 3 : 4–5 : 6–5 : 8.

Both in the minor and the major modes, the ratio of the perfect chords are all super-particular, that is, they have a difference between their terms of unity; and in both modes, also, the inversions include one ratio which has the exceptional difference of 2, and another with that of 3 (viz., 3 : 5 and 5 : 8). The same systems of ratios are, of course, applicable to any other thing which are of like nature, and the same proportions which exist between three notes may be applied to three masses or three dimensions. Thus the length, breadth and height of an apartment may have the same numerical proportions as the vibrations which produce the three notes of the perfect chord, viz., 4 : 5 : 6. Or the three diameters of a column, taken at the base, the neck and the echinus of the capital might conceivably be regulated by these ratios, or by those of one of the inversions.

But when we pass from audible sounds to visible dimensions, we are no longer bound, as I have said, to the ratios of musical scale and chords. Still, what I shall have to set forth by the positive proof of cumulative examples is, that the Athenian architect, Ictinus, valued the principle while giving it a larger application. We shall see that he showed a predilection for triads of dimensions of which the ratios had the same numerical difference between the several pairs, though a difference not restricted to unity.

Such a case is presented to us when we find breadth, height and length proportioned, as 4 : 9 : 14, giving the three ratios, 4 : 9 = 9 : 14 — (4 : 14 =) 2 : 7, each having the same difference of 5 between their terms. Nor are there wanting grouped triads of dimensions, of which only two pairs of the terms exhibit ratios of common difference, yet are valued nevertheless in direct analogy to the inversions of the perfect chords. Now, the cases to which I find the Greek architect applied the system of regulation by proportion — by proportions susceptible of expression in low integral numbers — are chiefly two: —

1. Cases of what I will call rectilinear proportion — either when proportionate dimensions were measured off upon a right line — or upon parallel right lines.

2. Cases of rectangular proportion — when proportionate dimensions are measured off on lines at right angles to each other — as is the case, for instance, with the length and breadth of an apartment.

3. Cases of proportion of areas — especially of the sectional areas of columns; circles being proportioned to each other as the squares of their diameters.

But while the Greek architect held himself released from the comparatively restricted range of ratios, to which the musician is bound by the special conditions of ærial vibration, he fully recognized, in responsibility to that unity of effect which is common to all the arts, the obligation to select, and to confine himself to, a scale.

Such a scale, adopted for a particular design, would be the equivalent of the key which the musician selects as appropriate for his theme. It is the sentiment of the theme which determines the key, and, in like manner, it must be the maturing conception of an architectural design, both as regards his purposes in use and its appropriate grade of dignity which controlled the selection of a scale. It is unnecessary for me to insist on the analogy of a scale of color, which becomes salient at once when we pass the eye from one to another of any pair of fine pictures. All possible proportions between two quantities are included between absolute disparity, 1 : 0 and complete equality, 1 : 1. Let us take two equal lines and, leaving one unaltered, as a standard, alter the length of the other by continuous diminutions. In this process we shall successively pass points which give proportions between the two lines that may be expressed by whole numbers — sometimes larger, sometimes simpler, that is by ratios as different as 99 : 100, 17 : 14 and 3 : 2. Among this crowd of ratios even those of comparatively low numbers are very numerous; and to make use of them indiscriminately would contravene the very purpose of art — which is to give definition and distinctive character to its work. The same mischief would result as if a painter, instead of setting his palette with reference to a certain tone and subordination of tints, were to take colors at random.

The requirements of a scale are, first, that it shall provide some certain proportions which are indispensable for the particular purpose in hand; for instance, which shall be applicable to the plan of such an oblong apartment as is demanded for due exhibition of an erect statue.

In the next place beyond such imposed conditions, some other ratios, in themselves not so absolutely prescribed, will be required and useful, and may not be difficult, to determine if the artist has already realized in his imagination the general effect that he is anxious to reduce to form. If such a conception has truly artistic value, of whatever style or grade, it is most certain that this must be due to some underlying principles of proportion to some prevailing characteristic ratios. By the determination of certain of these, the projected scale acquires some additional fixed elements. But it is the artistic conception which must be sent in search of the scale, not the scale which, by any process of mechanical manipulation, will put us in possession of an artistic conception, a poetic ideal.

Again, when the completion of the hypothetical scale for a given building is in question, we have the guidance not of the musical scale, but of the analogy of that scale. A sufficient variety of intermediate intervals is required for command of contrast and of gradation, distributed between the two extremities of 1 : 0 and 1 : 1. The sequence must not be crowded, which would forfeit distinctness; nor leave excessive vacancies, which would entail harshness in transition.

The character of such a scale would depend upon the primary selection of the leading proportions, and then on the intervals admitted between the several degrees of the scale, principal and subordinate. Its full characteristic effect in application would depend on the judicious insisting on certain chief proportions, by the employment of these first in the most important places, and then in a greater variety of combinations. Emphasis is thus given to a certain proportion when it is applied to govern in turn the dimensions of a plan, of an elevation, of the spacing of columns, of the divisions of a frieze, and so forth.

I will now illustrate these observations by the exhibition of the scale of proportions which was employed by the architect of the Parthenon. That it was so employed by him, I entertain no doubt that I can make quite clear to you in my next lecture; and until then, I must ask you to take the fact provisionally for granted.

I find then that the architect of the Parthenon in proportioning its plan, elevation, profiles and general details, adhered to a scale of which it is characteristic that the terms have a common difference of 5. Such a series, so far as he thought it applicable, runs on thus with a constant and gradually more rapid approach to equality between the terms.

1 : 6–2 : 7–3 : 8–4 : 9–5 : 10–6 : 11–7 : 12–8 : 13–9 : 14–10 : 15, etc. Of this series 5 : 10 and 10 : 15 are respectively equivalent to 1 : 2 and 2 : 3 terms having a difference of unity which are technically called super-particular ratios. This series continues 3 : 4–4 : 5–5 : 6, etc.

The intervals with differences of 5 become, as the series is extended, too close for distinctness; an extension of it is then gained by resorting to the super-particular ratios which recover the advantage of very low numerical expression. The particular scale has certain great advantages; but again, I must warn that it is only one of many which might be selected, each having a special applicability.

Now what is asserted — on proofs which, as I have engaged, shall be forthcoming — of the practice of the great Athenian architect is this. That starting from a certain definite dimension imposed by the conditions of the required structure, he made this the basis of his primary proportions; that he thus determined the length of his plan by a proportion to its given breadth of one hundred feet, and the height again by another proportion; subdivided his elevation with reference to the same or other proportions out of the scale; and so on, even to the division of quite subordinate members.

There is one inevitable consequence of the adoption of such a system for determining dimensions, which must be recognized; it is, that we have to give up all hope of setting them out by the foot rule, or any rule having uniform fixed divisions. None of us probably would doubt that if we took the measurement of the dimensions of this room, or of any article of fitting or furniture in it, we should find that it corresponded very accurately with a certain number of feet and inches. But nothing of the sort is detected in the Parthenon; the Greek foot is fully ascertained, its current subdivisions are well known; but it is much if more than two dimensions can be certified as having been determined with reference to it.

An example will make this position easily understood; if it is required to obtain a dimension which is proportioned to one hundred

feet as 9 : 14, we shall have as result sixty-four feet, three inches, three-eighths, and still with a remainder; and with the exactness which was prized as essential by the Athenian, the inches and fractions could not be neglected. And then the fraction-burdened dimension has to be made the basis of another deduced proportion, presenting a still more embarrassing result.

These complications would ensue equally, whatever form of fixed subdivisions might be adopted, whether feet and eighths, feet and tenths, or any arbitrary and even variable subdivisions of a modulus. In no example of a fine Greek building have the parts and members been found measurable with any approach to plausibility, in terms of a modulus.

Of course if we adopt a unit of excessive minuteness, we may technically escape this difficulty, but only by running to such a number of places of decimals as baffles useful application, and leaves us with no light as to simple principles of proportion. This observation applies to the various systems which have been proposed and employed for guidance in proportioning the human figure. If we divide the head or foot into very small aliquot parts, we may set down exact dimensions in such terms for every limb, and so far obtain a memorandum, either numerical or in form of a diagram, which will preserve from any gross disproportions; but such schemes afford no insight into the fundamental relations on which the marvellous harmonies of that most marvellous of all organisms really depend.

And as in nature, so in architecture or in any other art, this principle is to be kept in view, that proportionate relations are only to be recognized as applicable between terms which are essentially correlative. Such, for examples, are solids and voids, as windows and intermediate wall space; columns and spaces between columns; lengths and breadths of areas; subdivisions of the same architectural member, and so forth. There is no sense in snatching at commensurabilities of parts which are under no rational obligation to be commensurable.

Parts which are connected by the tie of proportion in their dimensions, may be more or less similar in character; and as they verge towards dissimilarity, they naturally lend themselves to effects of contrast, which may be reduced or reinforced by proportion. The solid column is in contrast with the void intercolumnar space; on the other hand, the difference between the upper and lower diameters of a column more easily contributes to an effect of gradation.

The practical significance of harmony is true to the etymology of the word, as implying accuracy of fitting together; and the precise adjustment, the conciliation for definite efficiency of elements which, if not so controlled, are refractory and mutually embarrassing, is the very triumph of ingenuity and art. It will therefore be readily understood that regulated contrast must be an all-important factor of harmonious and vigorously characteristic expression.

It will be the purpose of my second lecture to develope the application of these principles definitely and in detail, to show with what profound analytical instinct the Athenian architect selected the pairs of terms which he decided to link with each other proportionately, and selected further the particular linking proportion in each several case.

Now if the principle here set forth has any value in the combinations of art, it ought to be confirmed by comparisons with those natural combinations,—with those organisms of which the beauty and expression equally depend upon a harmony of the associated parts as members, in kind first, and then in proportionate dimensions of those parts.

What do we find to be the case in the human figure, — the most complex and most perfect of all known organisms? The primary fact of bilateral symmetry, of the repetition of like parts with transposition from left to right, on either side of a median line, is of course as conspicuous in the human figure as in a Greek temple. The advantage of equilibrium which is subserved in the living, the locomotive body, does not need to be consulted quite in the same way in the building, but it effectuates there what is a great advantage, the expression of equilibrium, of solidity, and also of that concentration which is the very essence of unity of purpose and unity of effect. Under what circumstances this principle may be neglected in important buildings, and then how the departure from it needs to be qualified and compensated—these are important and interesting questions, but would need to be treated separately.

As regards the proportionate division of the erect human figure, one current system divides the full height equally at the *symphsis pubis*, and then the upper half again on the line of the nipples, and the lower likewise into equal parts just below the patella. But two of these lines have no functional or structural significance; for a proportionate division, either in nature or art, to be significant, it must lie between terms which are naturally and importantly antithetical; only so can it express an adjustment of quantities, which brings into orderly relation those parts and functions which in themselves present the greatest contrast, and which therefore, unless thus brought under regulated control, may not only appear but be liable to fall into antagonism instead of coöperation and concert, and so to bring the entirety to confusion.

What shall we say, then, are the leading contrasts which, from this point of view, present themselves in the aspect of the erect human frame? I would say two, chiefly. The first of these is between the compact and massive trunk on the one hand, and on the other, the free lower limbs below, and the head and neck above. In the typical figure, accordingly, which is all that we can deal with, I find that the proportion applicable here is the simplest of all, after equality, namely, one to two; that is, the proper trunk is one-third of the full height, or, let us say, two-sixths.

Then the lower extremities taken upon the natural line of the *symphysis pubis*, is half the full height, or three-sixths, and we have one-sixth left for the head and neck. Otherwise stated, the joint height of head and neck is as one, to the solid trunk as two, and to the free lower extremities as three.

But as I have said, the aspect of the erect human figure presents intimation of another antithetical juxtaposition of parts, and this is of such a nature as to seem to demand still more authoritatively a response in proportional adjustment.

When we contemplate the human form, at the same time that we are possessed with a lively sense of its varied relations, the same distinction among them naturally declares itself, which is traceable as pervading the philosophical reflections of Prince Hamlet. "Noble reason" and "infinite faculties" are correlative to "expressive and admirable form and movement" — the action as of an angel to apprehension as of a God. Even so, consciously or unconsciously — that is, whether we formulate the impression or not — impressed we are by the correlation of what, with no meaning of disparagement, may be called the servile division of the body to the noble division. Even those of us who may be least inclined to consider our bodies to be what, in any stricter sense, we mean by ourselves, will recognize the difference in question — a nearer relation of the intellectual, imaginative and moral functions of our nature, to the head and that upper part of the trunk which lodges lungs and heart — the organs most intimately concerned and associated with sensation, thought and emotion. There are vessels of honor and vessels comparatively of dishonor; vessels, certainly, of different grades of dignity. The organs which subserve digestion, growth and locomotion are so far in a different line to the immediate instruments of our highest endowments, from the organs of speech and the expressive features, to the all-accomplished hands. (See *Builder*, 1 November, 1884.)

The line which marks this division below the chest gives, normally, as I believe, to the nobler upper division exactly half the height which is assigned to the lower—the subject or inferior division of the marvellous organism. This primary division is, in fact, regulated by the same simple ratio of 2 : 1.

As the purpose of the present lecture is to clear ideas generally on the subject of proportion — its forms in the abstract, and then as predominant in all the arts as well as in architecture—and in Nature as well as in art and on common principles — it is not going beyond its prescribed range to indicate how the same adjustment of proportions, which admit of expression in the simple terms of the arithmetical series 1 : 2 : 3, are common to the human frame and to the very masterpiece of Gothic architecture.

"The perfection of proportion, as of many other things, was reached," says Ferguson, "in Westminster Abbey. Here the whole height of a bay is divided into two equal parts, and the upper subivided into three, of which one is allotted to the triforium, and two to the clerestory." Now it will be observed that in this distribution, as in the typical human body, we have an exact division of full height into halves, associated with a further subdivision of one-half, resulting in a triple division which follows the arithmetical series, 1, 2, 3. But the triforium, the front of the gallery over the aisles, in virtue of structural relation which is duly emphasized by continuous decoration, groups preferentially with the arcade below. The two form a compound term of comparison with the height of the clerestory, in the ratio 2 : 1. The height from the pavement to the string-course above the triforium is just double the height of the crowning member, the clerestory, which asserts its independent and conspicuously distinct office above. (*Builder, ibid*).

In the demarcation here of the terms which are brought into precise proportion to each other, there is the same natural propriety as in the corresponding comparison of the superior and inferior divisions of the human body, and, as we shall see in the next lecture, governed the proportional adjustments of the Greek architects.

I have thus endeavored to clear ideas as to the function of proportion both in nature and art, and to indicate its relation not to one single art, but to all the arts; to clear ideas, also, as to the nature of a proportionate scale, as subject to the natural conditions of each particular art, and as being in each the aid to imagination, not its master or its substitute.

As there is a science of sciences, so there is an art of arts; the subject matter of this consists of the principles which are common to all the arts, in virtue of participation in which they become truly sisters. Predominant among these principles is common dependence on proportion. It is largely by his sense and by his mastery of proportion that the practiser of any art becomes in the highest and noblest sense an artist. It is at this point, also, that Art most intimately joins hands with Science, and this conjunction is most definitely pronounced in the cases of Music and Architecture. The music of the ancients, as I have said, has perished; and we only know enough of it to assure us that what fragments of their treatises on the subject have come down to us, give no adequate account of either their theory or their practice. The reverse is the case with their architecture; not even a fragment of the Greek treatises on this remain, but in compensation we have noble remains of their works, which, thanks chiefly to the labors of the Society of Dilettanti, continued from a century since down to the present year, are explored and measured and placed upon permanent record. It is on

the basis of such record that I propose, in the next lecture, to set forth how an important outline of the theory of Ictinus, the architect of the Parthenon, may be recovered from his executed, however unhappily ruined, work. If I succeed in doing this, the attention which I have demanded for this preliminary lecture will surely not have been conceded in vain.

ARCHITECTS, CLIENTS AND BUILDERS.

IT is a principle of law and equity that an agent is not allowed to make any profit out of an agency without the knowledge and consent of his principal, beyond his proper remuneration; and any sums of money so obtained by the agent from any other source must be accounted for to the principal, who may claim it as money received to his use. Where, therefore, an engineer (and this case again refers equally to an architect) entered into a sub-contract with the contractor without the knowledge or consent of the employer, it was held that any surreptitious dealings between the contractor and the engineer was a fraud, and entitled the defrauded employer, if he came in time, to have the contract which was entered into without his knowledge or consent rescinded, and to refuse to proceed with it in any shape. So, on the other hand, the architect should not, without the knowledge of the builder, enter into a contract or engagement with the employer. If, besides the contract between the employer and the builder, there is a contract between the employer and the architect, not communicated to the builder, that the outlay shall not exceed a given sum, and the builder is, by the contract, subject to the orders of the architect as to what works he shall execute, this agreement is not binding on the builder, and such restriction of the architect's authority by contract, as agent for the employer, cannot in any respect prejudice the builder's rights.

And in order to enable the employer to claim the benefit of the proviso, that the architect was to arbitrate in all matters between him and the builder, it is essential that the fact of such a contract as above mentioned, between himself and the architect should have been communicated to the builder, and distinct notice of such an engagement given to him previously to his entering into any contract, as otherwise the architect would be put in a position of undue bias.

If however, the builder was aware of the agreement between the architect and his employer, and of the fact of the architect's interest in consequence, the builder would be bound.—*London Architect.*

WESTERN ASSOCIATION OF OHIO ARCHITECTS.

THE following Constitution and By-Laws were adopted by the Western Association of Ohio Architects at their convention held at Columbus, Ohio, January 12, 1886: —

NAME.— Section 1.— The name of this association shall be The Association of Ohio Architects.

OBJECTS.— Sec. II.— The objects of the association are: To unite in fellowship the architects of the State of Ohio, to combine their efforts so as to promote the artistic, scientific, and practical efficiency of the profession, and to cultivate and encourage the study of kindred arts.

MEMBERS.— Sec. III.— This association shall consist of associates and honorary members.

QUALIFICATIONS. — Sec. IV. — Any architect engaged in the legitimate practice of his profession in the State of Ohio may become a member of this association.

[Amendment I to the constitution of the Western Association of Architects is given in definition of Sec. IV of these by-laws.] The status of an architect is hereby defined as follows, to-wit: An architect is a professional man whose sole ostensible occupation consists in supplying all data preliminary to the material, construction and completion of buildings, in exercising administrative control over the operations of contractors, supplying material and labor incidental to the construction and completion of buildings, and in officiating as custodian and arbitrator of contracts, stipulating terms of obligations and fulfillment between proprietor and contractor.

OFFICERS.— Sec. V.— The officers of this association shall be a president, a secretary, a treasurer, five vice-presidents, and an executive committee.

DUTIES OF OFFICERS.— Sec. VI.— It shall be the duty of the president to preside at all meetings of the association; or, in his absence, this duty shall devolve on the vice-president present from the city where the meeting is held, or that nearest to the same.

It shall be the duty of the secretary to take minutes of all meetings of the association, and to conduct all of its correspondence, subject to the control of the Executive Committee.

It shall be the duty of the treasurer to collect all funds of the association, and disburse the same on the order of the secretary, when countersigned by the chairman of the Executive Committee.

The Executive Committee shall consist of five associates, including the president. It shall require three members of this committee to constitute a quorum.

It shall be their duty to exercise control over the property and general interests of the association; to receive nominations for membership and act upon the same; to consider complaints and expel members of the association for cause; to act as a committee of arbitration on all questions submitted to it by members of the association, and generally to have control of its welfare and interests.

All calls for extra meetings shall be issued by the committee.

This committee shall report to the association at each regular meeting of the association.

All appeals from the action of the Executive Committee shall be to the Board of Directors of the Western Association of Architects.

AMENDMENTS.— Sec. VII.— This constitution may be amended by a two-thirds vote of the association members present at any meeting of the association; provided, that a notice of such proposed change shall have been mailed to each associate by the secretary, on the order of the Executive Committee, twenty days before the date of said meeting.

BY-LAWS.

MEETINGS.— Article I.— The regular meetings of this association shall be semi-annually and occur on the third Thursday of January and July, unless otherwise ordered by the Executive Committee, thirty days' notice having been given, the place to be chosen at each preceding regular meeting.

RULES OF ORDER.— Art. II.— The meetings of this association shall be conducted according to Roberts's Rules of Order.

APPLICATION FOR MEMBERSHIP.— Art. III.— Any person desiring to become a member of the association shall send his application in writing to the Executive Committee, this application to be indorsed by two associates of the association who are personally acquainted with the applicant.

ELECTION OF MEMBERS.— Art. IV.— Upon receiving an application for membership the Executive Committee shall investigate the standing of the applicant, and shall, by ballot, admit or refuse him. All discussion of applicants to be considered confidential.

DUES.— Art. V.— All associates of the association shall pay an initiation fee of $10, and an annual due of $3. Dues to be paid semi-annually, and prior to each regular meeting, and no person shall be entitled to vote at any meeting whose dues remain unpaid.

QUORUM.— Art. VI.— Twelve associates shall constitute a quorum for the transaction of business.

ELECTION OF OFFICERS.— Art. VII.— All officers of the association shall be elected at first regular meeting of each year of the association. They shall be elected by a majority ballot vote of the members present. If any member of the Executive Committee is absent from four of its consecutive meetings, the other members shall have power to declare his place vacant, and proceed to elect his successor for the remainder of his term.

PAPERS AND RECORDS. — Art. VIII. — All papers and other records, not considered by the Executive Committee confidential, shall be at all times open to the inspection of the associates of the association.

AMENDMENT OF BY-LAWS.— Art. IX.— The by-laws of this association may be amended by a two-thirds vote of the associates present at any meeting, notice having been given as in the case of proposed amendments to the constitution.

The next semi-annual meeting of the association will be held at Cincinnati on the third Thursday of next July, when it is hoped all members of the association will be present.

PHILADELPHIA BOARD OF CITY TRUSTS.

AT a recent meeting of the Board of City Trusts, Secretary Highley reported that the number of students at Girard College on April 30, was 1,358. The April receipts were $38,843.87, and the expenses $7,384.43. The net income of the Board for this year is estimated at $133,399.81, as against $11,937.08 at the corresponding time last year.

A communication was read from John Wanamaker, Hood, Bonbright & Company, Strawbridge & Clothier, Edward T. Steel & Company, Joel J. Bailey, Henry C. Gibson, C. H. Garden & Company, Reigel, Scott & Company, Young, Smith, Field & Company, and Jenney & Andrews suggesting that a hotel be erected upon the lot bounded by Twelfth, Girard and Market streets and the new street laid out by the Board. Among other reasons that influenced the communication were that "the lot is 220 x 180 feet, each side of the quadrangle facing upon the street; is by situation, conformation and size most admirably adopted for a hotel site. It is central to business, churches, libraries and places of amusement. It is essentially the site for a travellers' hotel (rather than one of permanent residence for city people), as it is the only lot of sufficient size with the proper street facing now available or ever likely to be available for such a purpose in so central a quarter. The hotel accommodations in our city are far inferior to those of New York, Boston, or Chicago, and increased attractions are needed for travelers coming here from all parts of the country. It is an admitted fact that our hotel accommodations compare most unfavorably with those of other great commercial centres." In conclusion, the writers state that they will be glad to appear before the Board and present their views in detail. The subject was referred to an appropriate committee.— *Philadelphia Bulletin.*

COMMUNICATIONS

[*We cannot pay attention to the demands of correspondents who forget to give their names and addresses as guaranty of good faith.*]

PETROLEUM AS FUEL.

Pine Plains, N. Y., May 20, 1886.

To the Editors of the American Architect:—

Dear Sirs,— The enclosed item I clipped from some paper a little time ago.

Will you have the kindness to put me in communication with some party who can furnish the necessary apparatus to generate steam by the use of petroleum. Several persons here are interested in the matter and would like the necessary information.

Respectfully yours, A. Mattice.

[The National Heat and Light Company, 376 Atlantic Avenue, Boston, may possibly be able to give the information required, and several other parties have taken out patents relating to the subject, whose addresses some of our readers can perhaps give us. The Norway Iron Works, South Boston, Mass., have a petroleum puddling furnace, and may be able to supply information. The only application of the system on a small scale that we know of in this country was made by an amateur who fitted a petroleum spray burner to a cooking stove. It is said to work well, and to be odorless, but the fire admits of very little moderating. In Germany, as we understand, it is preferred to burn the oil without a wick. A tube, like that of an ordinary atomizer, dips nearly to the bottom of the oil receiver, the outer end being arranged to spray the oil. A portion of oil in the reservoir or elsewhere, is then heated so as to introduce vapor into the reservoir, the pressure of which forces out the oil through the spray tube. The preliminary heating of the oil to produce the pressure of vapor in the reservoir is due either by means of an auxiliary fire, or by pouring a little oil into a cup attached in some way to the reservoir, and furnished with a wick, and lighting it.— Eds. American Architect.]

NOTES AND CLIPPINGS

Accident to Elihu Vedder.— Elihu Vedder has met with a serious accident, which may end his work as an artist. The New York *World* says:—

He was engaged (in Rome) one evening in amusing his son upon the roof of his house. The two were flying a kite. The house next to Mr. Vedder's is several feet lower. Mr. Vedder, absorbed in flying the kite, walked off from the roof of his own house and fell to the lower one of his neighbor's. In this fall his entire weight was thrown upon his right hand. This resulted in breaking nearly all of the small bones of his hand. This was the most serious result of the fall. In recovering, these bones have knit together wrong, and the result is that they will have to be broken and reset, else his hand will be absolutely crippled for doing any more work. His left hand has been for some time disabled, so that it was of no use to him professionally. The result of the experiment of restoring Mr. Vedder's right hand to something like its original capacity by the surgeons will be awaited with great interest.

The Proposed Vermont Soldiers' Home.— The Trustees of the Vermont Soldiers' Home held a meeting at the Van Ness House May 11, to take action in regard to the location and erection of the proposed home. Gen. Wells of Burlington presided. The following propositions were made to the Trustees for the location of the Soldiers' Home: From Baxter Post of Newport, $500; from Col. John B. Mead of Randolph, a large boarding house, valued at $13,000; from the Trustees of the Norwich Classical and English Boarding School at Norwich, a brick building and grounds; from the town of St. Johnsbury, the sum of $5,000. Major Valentine of Bennington stated that the Hunt property, recently made over to the Trustees of the Park House by the heirs of the late Hon. T. W. Park, could doubtless be secured for the Home, provided its acquisition was deemed desirable. The Trustees reported the number of old soldiers in their respective counties who would probably avail themselves of the proposed home to be in all 77. Resolutions offered by Col. Fairbanks were unanimously adopted by the Trustees, stating that "in view of the reports which have been made from the various towns of the State in regard to the need for a Soldiers' Home we deem it wise to proceed at once, or as soon as may be, to establish a home under the provisions of the law." Gen. William Wells, ex-Gov. Redfield Proctor, Major Josiah Grout and Col. Julius J. Estey were appointed a committee to visit the various towns making propositions for the location of the Soldiers' Home. A resolution was also adopted authorizing the President and Secretary to call on the Treasurer of the State for the appropriation of $10,000 to be used in establishing a Soldiers' Home. Offers were made by the St. Johnsbury Woman's Relief Corps and Post W. C. Tracy of Windsor to furnish rooms in the Soldiers' Home when erected. The outlook for the location of the Home at an early day seems to be promising — *Boston Journal.*

Dangers in the Improper Working of Mild Steel.— From a paper on the "Injurious Effect of a Blue Heat on Steel and Iron," by Mr. C. E. Storomeyer, Assoc. M. Inst. C. E., it appears that in the face of the many good qualities of mild steel and its liberal use in ship-building and boiler-construction, that many engineers considered it a treacherous material. Many instances were adduced in which it had failed unaccountably, in nearly all of which an examination seemed to prove the fact that the plates were subjected to bending or hammering while at a blue heat, or "black heat," the latter being the term applied by boiler-makers and blacksmiths. The author stated that steel which had been bent cold, either once or twice, would stand almost as many subsequent bends as the original test-pieces. But if the same material was bent once while blue-hot, it lost a great deal of its ductility. Out of twelve samples, in which two preliminary hot bends were made, nine broke with a single blow of a hammer, and the other three only stood one or two subsequent bends. Thin Lowmoor iron did not break quite so easily, but supported about one-half the original number of bends. The experiments all pointed to the great danger incurred if iron or steel were worked at a blue heat. The difference between good iron and mild steel seemed to be that iron broke more readily than steel while being bent; that iron suffered more permanent injury than steel by cold working, but that if it had successfully withstood bending when hot, there was little probability of its flying to pieces when cold, like mild steel. It is a common practice among boiler-makers to "take the chill out of a plate" if it required a little settling, or to set a flanged plate before it was cold. This was working it blue-hot, and should not be allowed. All hammering or bending of iron and steel should be avoided, unless they were either cold or red-hot. Where it is impossible to avoid working steel at a blue heat, it should be annealed afterward. It was satisfactory to learn that, since the introduction of mild steel, a practice had been gaining ground among boiler-makers which must have the effect of guarding against such failures, and should be encouraged. It consisted in the cessation of work as soon as a plate, which had been red-hot, became so cool that the mark produced by rubbing a hammer-handle or piece of wood over it would not glow. A plate which was not hot enough to produce this effect, yet too hot to be touched by hand, was most probably blue-hot, and should under no circumstances be hammered or bent. The theory that local heating of a plate set up strains which sometimes caused failures did not appear to be supported by the experiments. This is a matter for consideration by architects, steam engineers, and boiler-makers, now at a time when the first-mentioned are calling for steel boilers. It appears that the flange-turner by working the steel plates below a certain temperature may make them unsafe, say below 800° Fahrenheit, and that the habit of holding a mass of red-hot iron against a lap or part of a boiler to draw it up by hammering should be discontinued, as it is much safer — in the case of steel, at least — to draw it up cold if it cannot be made to fit red-hot. Heads of cylindrical boilers turned by machine, at one heating, with a long radius in the corner of the flanges, would, according to this, appear to be safer than one turned by short heats on a block.— *Sanitary Engineer.*

A Mandalay Monastery. — "There are two great religious edifices in Mandalay, which it is the duty as it is the pleasure of the traveller to see. The city, like all Burmah, teems with pagodas and temples. Every hilltop, every plain, every grove of trees, every garden has its graceful building in white or gold, giving evidence of the piety and of the lavishness of their innumerable founders. The amount of money thus expended during centuries, and now still lavished year by year, and month by month, is past the counting of all the clerks in the Bank of England. The roads, the palaces, the fortifications, the aqueducts, that might have been built with all this brick and mortar to say nothing of the stucco or the gold leaf, sometimes an inch thick! A chance fire burnt down one great pagoda, and the gold melted from its immense surface is said to have been worth sixty-five lakhs! It was replaced by Theebaw, and more gold added. This enormous waste of the national resources presevered in through generations may account for the manifest poverty of the population, which lives for the most part in habitations of wicker work eked out with matting. There is no accumulation of property; every family lives an ephemeral life, those that come after will live the same. The palace in Mandalay is composed of planks carved and gilt profusely indeed; but there is not a pucka wall to give consistence or permanence to a single wing of it. Three or four miles away the plinth of a pagoda was built by Mindo-Min with such an extravagant waste of solid material that even as it stands, it is said to be the greatest mass of brickwork in the world. An earthquake — nothing else would suffice — rent it, and the pagoda never was built on it. But there it remains. This was only one of the vast religious structures which marked that monarch's reign. In Mandalay itself he erected a monastery — the 'Like-of-which-there-is-not' — the Incomparable, which possesses a room unquestionably the finest in all Mandalay. It would be no great stretch of fancy to say it is the first in the world. The building is composed of a series of bold terraces, six in number, rising one above another, the central one being the highest. The golden room is carried on thirty-six pillars, some of which are seventy feet high, the ceiling reaching its greatest elevation in the high central terrace, under which is a colossal figure of Gautama beside a golden throne. The boldness of the general design, the noble proportions of the immense hall, and the great height attained over the throne and the statue fill the mind with surprise and pleasure. Pillars, walls, and ceiling are richly gilt, glass inlaying heightening the brilliancy. The Chief Commissioner has shown his appreciation of the beautiful in prescribing the Incomparable as the scene of the great ceremonial, if circumstances permit of its being held. Externally, the building is vast, but plain in design and material; the walls are white stucco, and severely plain. But the mass, bathed in the bright sunlight, is imposing in its simplicity. Not far from the Incomparable is a pagoda of great size and perfect symmetry, covered with gilding, and rising up among no less than 464 little chapels — if such they may be called — each containing a large tablet of white marble, on which is inscribed a portion of the sacred Buddhist books. Thus the whole of the law is displayed, cut in marble to the eyes of the inquirer. This pagoda, with its surrounding buildings, must have cost from twelve to fifteen lakhs. It bears the title of the Royal Merit — significant of the conviction indulged in by Mindo-Min that in building this great religious edifice, with its instructive surroundings, he had earned for himself the great reward, when the time should come, 'to reign among the spirits' (not to 'die' like an ordinary mortal). He would merit nirvana itself and have done with the sin and suffering of existence. King Theebaw, I hear, was engaged in constructing a magnificent building, to cost twenty-three lakhs, at some distance from Mandalay; a structure so vast as to establish his Royal merit beyond all doubt or cavil. But it will never be finished." — *The Bombay Gazette.*

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PERSPECTIVE DRAWING.

The *American Architect* Drawing-Office will undertake the preparation of perspective drawings in line or color from scale drawings, or will render drawings already in outline. Address the editors.

BUILDING INTELLIGENCE.

(Reported for The American Architect and Building News.)

[Although a large portion of the building intelligence is provided by their regular correspondents, the editors greatly desire to receive voluntary information, especially from the smaller and outlying towns.]

ALTERATIONS.

New York, N. Y.—*Ninth Ave., Nos. 21 and 23*, three-st'y brick dwell. and store, internal alterations and one-st'y extension; cost; $6,000; owner, Patrick Skelly, 137 West Fifteenth St.; architect, John B. Snook, 12 Chamber St.

Greenwich St., No. 187, three-st'y brick office-building, internal alterations; cost, $3,000; owner, North River Bank of City of New York; mason, Samuel I. Acker, 57 West Thirtieth St.

Seventieth St., n s, 100' e Third Ave., five-st'y brick building, extension; cost, $30,000; owners, Little Sisters of the Poor, Seventieth St., near Third Ave.; architect, L. J. O'Connor, 111 Broadway.

Crosby St., Nos. 60-66, six-st'y brick stores and lofts, alterations and repairs; cost, $10,000; owner, E. Livingston, 17 East Seventy-fourth St.; architect, Geo. B. Pelham, 1481 Broadway.

Broadway, s w cor. Leonard St., six-st'y brick store, internal alterations and repairs; cost, $5,000; owner, Estate E. J. M. Hale; architect, Stephen D. Hatch, 115 Broadway.

John St., s w cor. William St., four-st'y brick office-building to be raised five stories and internal alterations; cost, $5,000; owner, John W. Hammersly, 255 Fifth Ave.; architect and carpenter, Elward Smith, 47 Ann St.

Seventh Ave., Nos. 800-808, 5 four-st'y brick buildings, new store fronts and alterations; cost, $3,000; owner, Aaron Hirshfield, 156 East Seventy-ninth St.; architect, Chas. Rentz, 153 Fourth Ave.

West Thirty-ninth St., No. 653, two-st'y brick slaughter-house, internal alterations; cost, $5,000; owner, Edward W. Davis, *et al.*, 32 East Eighty-fourth St.; mason, Jas. Buckley, 428 Eleventh Ave.

Providence, R. I. — *Carpenter St., No.* 150, alteration to frame dwell.; cost, $1,400; owner, Mrs. F. F. Morrow; builder, K. McNeil.

APARTMENT-HOUSES.

New York, N. Y. — *West Thirty-sixth St., No.* 427, five-st'y brick flat, tin roof; cost, $17,000; owner, Daniel D. Lawson, 420 West Forty-seventh St.; architect, James W. Cole, 401 West Forty-sixth St.

One Hundred and Second St., s w cor. Tenth Ave., five-st'y brick flat and addition, tin roof; cost, $28,000; owner, Charles G. Tomlinson, Tenth Ave., e s, 40' s One Hundredth St; architect, Ralph S. Townsend.

Seventh Ave., s w cor. One Hundred and Twenty-second St., five-st'y brick flat, tin roof; cost, $30,000; owner, George A. Thomas, cor. West Ninety-fourth St. and Boulevard; architect, James H. Westcott, 678 Lexington Ave.

Tenth Ave., s w cor. Sixty-fourth St., 3 five-st'y brick flats, tin roofs.; cost, $48,000; owner, A. A. Hughes, 2063 Fifth Ave.; architect, Wm. B. Tuthill, 52 Broadway.

Forsyth St., Nos., 142-144, 2 five-st'y brick flats, tin roofs; cost, $30,000; owner, E. Muller, 446 East Seventy-sixth St.; architect, John Brandt, 1491 Third Ave.

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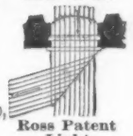

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Has Removed his Office and Salesroom to
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Where Catalogues, Samples and Estimates can be obtained.

East Twenty-eighth St., No. 227, five-st'y brick flat, tin roof; cost, $20,000; owner, John Fish, 97½ Seventh St.; architect, Richard Berger, 110 Leonard St.

Ninth Ave., w s, 51′ 2″ n Eighty-second St., five-st'y brick flat, tin roof; cost, $16,000; owner, Geo. F. Ferris, 146 Broadway; architect, Wm. B. Tuthill, 52 Broadway.

Thirtieth St., s s, bet. Lexington and Third Aves., five-st'y brick flat, tin roof; cost, $25,000; owner, Hellmuth Kranich, 232 East Thirty-seventh St.; architect, Joseph M. Dunn, 1193 Broadway.

Fourth Ave., w s, 25′ n Eighty-fourth St., five-st'y brick flat, tin roof; cost, $15,000; owner, Jas. Meehan, 25 West Twenty-third St.; architect, H. J. Hardenburgh, 10 West Twenty-third St.

Eighty-fourth St., s s, 254′ 2″ e Third Ave., 2 five-st'y brick flats, tin roofs; cost, $34,000; owner, Lucas George, 171 East Ninetieth St.; architect, John C. Burne, 1531 Third Ave.

East Twelfth St., Nos. 646-650, 3 five-st'y brick flats, tin roofs; cost, $42,000; owner, Baldwin Stanback, 1652 Avenue A; architect, Chas. H. Richter, Jr., cor. Forty-ninth St. and Ninth Ave.

Fifty-third St., n w cor. Eighth Ave., five-st'y brick flat, tin roof; cost, $18,000; owner, Henry B. Wright, 30 West Sixty-fifth St.; architects, Berger & Baylies, 52 Bible House.

Eighty-fifth St., n s, 150′ w Avenue B, 4 five-st'y brick flats, tin roofs; cost, $76,000; owners, Moore A McLaughlin, 346 East Eighty-first St.; architects, Thom & Wilson, 1267 Broadway.

East Thirtieth St., No. 146, five-st'y brick flat, tin roof; cost, $35,000; owner, Hellmuth Kranich, 232 East Twenty-seventh St.; architect, Joseph M. Dunn, 1193 Broadway.

Delancy St., No. 204, six-st'y brick flat, tin roof; cost, $22,000; owners, T. Krakower & Co., 86 Attorney St.; architect, Chas. Rentz, 153 Fourth Ave.

CHURCHES.

New York, N. Y. — *Fifty-second St.*, n s, 250′ w of Ninth Ave., one-st'y brick church, peak slate roof; cost, $30,000; owner, Martha Memorial Church Association, 910 Ninth Ave. (John Ruck, President); architects, Thom & Wilson, 1267 Broadway.

FACTORIES.

Boston, Mass. — *Essex St., Nos.* 128-130, brick factory, 60′ x 62′; owner, James L. Little; builder, H. McLaughlin.

New York, N. Y.—*Ninety-second St.*, n s, 94′ w Ave. A, two-st'y brick machine-shop, tin or felt and gravel roof; cost, $3,800; owner, James Innes, 2494 Second Ave.; architect, Chas. S. Warner, 132 Broadway.

Philadelphia, Pa.—*Berks St.*, n s, between Hancock and Mutter Sts., four-st'y brick factory; owner, E. Thompson, 1908 North Eighth St.

HOTELS.

Birmingham, Ala.—Caldwell Hotel, six-st'y brick, stone and terra-cotta; cost, $100,000; Edward Sidel, architect.

Cottonwood Falls, Kans.—The plans and specifications for Dr. Arnold's proposed hotel at Matfield Green are completed and the contract will be let as soon as the location is settled. The building will be 40′ x 70′, two stories and a mansard.

Dodge City, Kans. — R. M. Wright contemplates building a $20,000 hotel on the site east of the Dodge House in Dodge City.

Kinsley, Kans., is soon to have a $40,000 hotel. Four years since that entire town was worth less than $40,000.

HOUSES.

Boston, Mass.—*Sanborn St.*, near Harvard St., wood dwell., 28′ x 30′; F. W. Bicknell, owner; E. F. Moulton, builder.

Park St., near Adams St., wood dwell., 21′ x 28′; William Jillis, owner; H. P. Oakman, builder.

Sparhawk St., near Sparhawk Ave., wood dwell., 34′ x 40′; S. N. Davenport, owner and builder.

C St., Nos. 7-9, wood dwell., 20′ x 40′; T. W. Roulston, owner; James Roulston, builder.

Paris St., near Monroe St., wood dwell., 20′ x 20′; Sarah Bravert, owner; Daniel Gallagher, builder.

Simmis St., near Conway St., wood dwell., 22′ x 50′; F. H. Hesse, owner; Swanson P. Murray, builder.

Blue Hill Ave., No. 144, wood dwell., 23′ x 60′; J. W. Toby, owner and builder.

Birmingham, Ala. — W. F. Smith, two-st'y frame cottage; cost, $2,200; architect, W. S. Smith.

Frank Ryan, two-st'y frame house; cost, $3,000; architect, same as last.

Hollingsworth, two-st'y frame house; cost, $2,500; architect, same as last.

McCloud, two-st'y Queen Anne cottage; cost, $3,500; architect, F. L. Rousseau.

A. C. Oxford, two-st'y frame house; cost, $2,000; architect, same as last.

Harry Harsh, two-st'y frame house; cost, $2,800; architect, Chas. Wheelock.

Mrs. F. A. Steele, two-st'y frame house; cost, $4,000; architect, same as last.

W. H. Garside, 3 cottages; cost, $2,000; architect, same as last.

F. J. Cook, two-st'y frame house; cost, $3,200; architect, same as last.

Germantown, Pa. — *Wayne St.*, cor. Harvey St., stone house; cost, about $11,000; owner, Mrs. J. Riegal; architect, Lindley Johnson.

New York, N. Y. — *One Hundred and Thirty-second St.*, n s, 100′ w Sixth Ave., One Hundred and Thirty-third St., s s, 100′ w Sixth Ave., 6 three-st'y and basement brick dwells., tin and slate roof; cost, $54,000; owner, Isaac E. Wright, 1983 Madison Ave.; architects, Cleverdon & Putzell., 110 East One Hundred and Twenty-fifth St.

One Hundred and Thirty-fifth St., s s, 350′ w Willis Ave., 5 two-st'y brick dwells., tin roof; cost, $20,000; owners, Edgar Ketchum, Jerome Ave., near One Hundred and Sixty-fifth St., and Wm. I. Hargrave, One Hundred and Sixty-ninth St., near Jerome Ave.; architect, Edgar K. Bourne, 62 East One Hundred and Twenty-fourth St.

Seventh Ave., e s, 24′ 11″ n One Hundred and Thirty-fifth St., 7 three-st'y and basement brick dwells., tin roofs; cost, $80,000; owner, Amenda M. Tompkins, 2297 Seventh Ave.; architect, Andrew Spence, 2294 Third Ave.

East Ninth Ave., s, 67′ n One Hundred and Twenty-third St., 2 three-st'y and basement brick dwells., tin roofs; cost, $30,000; owner, Mary E. Bailey, 190 East One Hundred and Fourth St.; architect, Chas. Baxter, 112 East One Hundred and Twenty-fifth St.

One Hundred and Twenty-sixth St., s s, 120′ w Fifth Ave., four-st'y brick dwell., tin roof; cost, $10,000; owner, George Taylor, 873 Broadway, architect, Wm. B. Tuthill, 52 Broadway.

One Hundred and Twenty-sixth St., s s, 140′ w Fifth Ave., four-st'y brick dwell., tin roof; cost, $11,000; owner, John T. Wilson, 29½ East One Hundred and Twenty-seventh St.; architect, Wm. B. Tuthill, 52 Bowery.

Fulton Ave., e s, 100′ n One Hundred and Sixty-eighth St., 6 two-st'y frame dwells., tin roofs; cost, $18,000; owner, Sarah M. Simpson, 1251 Franklin Ave.; architect, D. F. Frisbie, 716 East One Hundred and Sixty-sixth St.

Eighty-fourth St., n s, 75′ w Fourth Ave., 4 three-st'y and basement brick dwell., tin roof; cost, $36,000; owner, James Meehan, 25 West Twenty-third St.; architect, H. I. Hardenburgh, 10 West Twenty-third St.

Ninety-first St., n s, 100′ e Madison Ave., three-st'y stone-front building; cost, about $20,000; owner, Wm. Johnson; architects, A. B. Ogden & Son.

Seventy-sixth St., s w cor. Madison Ave., four-st'y brown-stone house; cost, $30,000; architect, Messrs. Chas. Graham & Sons.

Philadelphia, Pa. — On Railroad, bet. Sixty-third and Sixty-fourth Sts., 2 two-st'y brick dwells.; owner, Wm. M. Mills, cor. Fifty-fifth St. and Woodland Ave.

Nineteenth St., w s, bet. North St. and Fairmount Ave., 4 three-st'y brick dwells.; contractor, Jno. Gibson, 1323 Reed St.

Chelton Ave., s s, bet. Weyne and Pulaski Aves., 2 three-st'y brick and stone dwells.; contractor, George Hearst, School Lane near Morris St.

Twenty-second St., w s, bet. Chestnut and Market Sts., 3 three-st'y brick and stone dwells.; owner, Jacob Myers, 1315 Sampson St.

Josephine St., w s, bet. Oxford and Church Sts., 2 two-st'y brick dwells.; owner, Joseph P. Yerkes, 4929 Frankford Ave.

Rappin St., n Dead St., 2 two-st'y brick dwells.; owner, Joseph P. Yerkes, 4929 Frankford Ave.

Lisser Ave., bet. Eighty-eighth and Eighty-ninth Sts., 2 two-st'y frame dwells.; contractor, Francis Kelly, 2913 Norwood Ave.

Germantown Ave., w s, bet. Somerset and Cambria Sts., 8 two-st'y brick stores and dwells.; owner, F. A. Collamer, 2613 North Ninth St.

Providence, R. I. — *Keene St.*, near Thayer St., frame dwell.; cost, $3,500; owner and architect, F. J. Sawtelle; builder, R. Hayward.

Joslin St., e s, frame dwell.; cost, $1,400; owner, P. McNally; builder, P. McDonough.

North Main St., s e cor. Lancaster St., frame dwell.; cost, $2,000; owner, G. N. Charles; builder, J. R. McLeod.

Somerset St., s s, frame dwell.; cost, $3,300; owner, Mrs. Mary Fuller; builder, S. A. Bennett.

PUBLIC BUILDINGS.

Kansas City, Mo. — A large meeting and a representative meeting of citizens was held at the Board of Trade Hall, May 21, where resolutions were passed favoring a new court-house. A special election is suggested to vote upon a proposition for an appropriation of $800,000 by the county for the purpose.

STABLES.

Birmingham, Ala. — Brick livery stable; cost, $7,000; owner, Col. Jackson; architect, Chas. Wheelock.

Boston, Mass. — *Danforth St.*, near Boylston St., wood stable, 18′ x 20′; T. Ernst, owner; J. Trippold, builder.

Memphis, Tenn. — Overton & Grosvenor, rear of Second St., Nos. 326, 328 and 330, two-st'y brick stable; cost, $5,000.

New York, N. Y.—*Twenty-fifth St.*, s s, 125′ e Eleventh Ave., three-st'y brick stable, tin roof; cost, $4,500; owner, Ichabod T. Williams, cor. Twenty-fifth St. and Eleventh Ave.; architect, Joseph M. Dunn, 1193 Broadway.

Seventy-seventh St., s s, stable, brick and terra-cotta front; owner, Jacob Schipp; architects, De Lemos & Cordes.

STORAGE.

Boston, Mass. — *Princeton St., No.* 275, wood storage, 20′ x 30′; Frank Evans, owner and builder.

STORES.

Birmingham, Ala.—Geo. Lemsford, three-st'y brick business house; cost, $15,000; F. L. Rousseau, architect.

Joseph Hardie, three-st'y brick business house; cost, $5,500.

Columbus, Kans.—Shackle & Willis will commence in a few days a two-st'y brick structure on the site of their present store. The old frame will be moved into the street until the new house is completed. Haseltine & Timberlake will also put the second story on their building, which adjoins Shackle & Willis.

Walterville, Kans.—J. R. Edwards will commence as soon as possible the erection of a two-st'y building, of either stone or brick, on the lot where his store is at present.

WAREHOUSES.

Memphis, Tenn. — J. W. Voegeli, 402 Main St., three-st'y brick storehouse; cost, $12,109.

S. A. Frunsiola, 400 Main St., three-st'y brick storehouse; cost, $10,147.

E. Vaccaro, 404 Main St., three-st'y brick storehouse; cost, $10,114.

BIDS AND CONTRACTS.

New York, N. Y. — The contract for tearing down the old Produce Exchange building has been awarded to Thos. E. Tripler. On the site a building is to be erected for the Quartermaster's Department of the U. S. Army; Stephen D. Hatch, architect. It was originally intended to alter the present building.

Woodston, Kans.—The contract will soon be let for the G. A. R. Hall, 24′ x 70′, two stories high.

PROPOSALS.

STEAM-HEATING, ETC.
[At Davids Island, N. Y.]
Depot Quartermaster's Office,
Davids Island, N. Y. H., May 26, 1886.

Sealed proposals, in triplicate, subject to the usual conditions, will be received at this office **until 12 M., June 14, 1886**, at which time and place they will be opened in presence of bidders, for providing a steam heating and cooking apparatus for the new mess hall and kitchen at Davids Island, according to plans and specifications to be seen at this office, or at the office of W. J. Baldwin, Consulting Engineer, 96 Fulton St., New York City.

Competition will be confined to parties engaged in the manufacture of or dealers in steam heating or steam cooking apparatus.

Blanks and instructions to bidders furnished on application. Envelopes containing proposals to be marked "Proposals for Steam Heating and Cooking Apparatus," and addressed to the undersigned. Informal bids will not be considered.

The right to reject any or all proposals is reserved by the Government. GEO. H. COOK,
Capt. and Asst. Quartermaster, U. S. Army,
546 Depot Quartermaster.

LATHING AND PLASTERING.
[At Shreveport, La.]
Office of Supervising Architect,
Treasury Department.
Washington, D. C., May 24, 1886.

Sealed proposals will be received at this office **until 2 P. M., on the 14th day of June, 1886**, for all lathing and plastering required in the post-office, court-house, etc., building at Shreveport, La., in accordance with drawings and specification, copies of which and any additional information may be obtained on application at this office or the office of the superintendent.

Bids must be accompanied by a certified check for $200. M. E. BELL,
544 Supervising Architect.

COURT-HOUSE.
[At Howard, Kans.]

Sealed proposals will be received by J. S. Johnson, County Clerk of Elk County, Kans., at the clerk's office in the City of Howard, **up to 3 o'clock, P. M., June 7, 1886**, for the erection and completion of a court-house and jail building and jailor's residence on the public square in the city of Howard, Elk County, Kans., according to plans and specifications prepared for same by W. R. Parsons & Son, architects, Topeka, Kans.

Plans and specifications may be seen on file in the County Clerk's office of Elk County, Kans., or in the office of architects, 227 Kansas Ave., Topeka, Kans.

Each bid must be accompanied by a certified check to the amount of $500, or a good and sufficient bond to the amount of $5,000, that the bidder will at once enter into contract for the performance of the work, and give bond to twice the amount of the contract with good and sufficient sureties for the faithful performance of the same.

Contract will call for the completion of work on or before January 1, 1887.

Bids to be addressed to R. W. M. Rowe, Chairman Board of County Commissioners, and endorsed proposals for Elk County court-house and jail building and jailor's residence.

The Board of County Commissioners reserve the right to reject any and all bids.

By order of the Board of County Commissioners.
545 J. S. JOHNSON, County Clerk.

COURT-HOUSE.
[At Stanton, Dak.]
Stanton, Dak., April 5, 1886.

Notice is hereby given that sealed bids will be received by the undersigned **up to Monday, July 5, 1886**, for the construction of a court-house in Stanton, Mercer County, Dak., said court-house to be of frame or brick veneered, 24′ x 40′, two-st'y high.

Plans and specifications may be seen at my office.

All bids must be accompanied by good and sufficient bonds for half of the contract price.

The Board of County Commissioners reserves the right to reject any or all bids.

By order of the Board. A. H. MACRORIE,
544 County Clerk.

PHOTO-LITHOGRAPHS.
[At Washington, D. C.]
Office of the Light-House Board,
Treasury Department,
Washington, D. C., May 17, 1886.

Sealed proposals will be received at this office **until 2 o'clock, P. M., of Monday, the 14th day of June, 1886**, for furnishing photo-lithographic copies of drawings for the light-house establishment for the fiscal year ending June 30, 1887.

Specifications and forms of proposal may be obtained on application to this office.

The right is reserved to reject any or all bids, and to waive any defects. S. C. ROWAN,
544 Vice-Admiral U. S. N., Chairman.

CITY-HALL.
[At Vincennes, Ind.]

Sealed proposals for the erection of a new city-hall at Vincennes, Ind., will be received at the office of the City Clerk at Vincennes, Ind., **up to 7 P. M., June 14, 1886.**

Drawings and specifications for the said building will be on file on and after June 1, 1886, in the office of C. M. Allen, Jr., City Clerk, Vincennes, Ind., and in the office of H. Woltors, architect, Louisville, Ky.

The right is reserved to reject any and all bids.

A good and sufficient bond or a certified check must accompany each bid.

By order of the Common Council.
C. M. ALLEN, Jr.,
545* City Clerk.

LABOR AND MATERIALS.
[At Nebraska City, Neb.]
Office of Supervising Architect,
Treasury Department,
Washington, D. C., May 22, 1886.

Sealed proposals will be received at this office **until 2 P. M., on the 19th day of June, 1886**, for all the labor and materials required to complete the court-house, post-office, etc., building at Nebraska City, Neb., ready for interior finish, in accordance with drawings and specification, copies of which and any additional information may be had on application at this office or the office of the superintendent.

Bids must be accompanied by a certified check for $1,500. M. E. BELL,
544 Supervising Architect.

PROPOSALS.

CITY-HALL. [At Richmond, Va.]

CITY ENGINEER'S OFFICE,
RICHMOND, VA., May 3, 1886.

Sealed proposals will be received at this office **till June 10th next, at 12 o'clock,** M., for building a city-hall in accordance with plans and specifications on file at the city engineer's and architects' offices.

Bids will be received for Virginia and other granites.

The "Committee on Grounds and Buildings" reserve the right to reject any or all bids.

For information apply at the city engineer's or the architects' office. WAIT & CUTTER,
7 Exchange Pl., Boston, Mass. Architects.
545*

COURT-HOUSE. [At Salem, Ind.]

Sealed proposals will be received **till 12 o'clock,** M., **June 26, 1886,** for the erection of a new fireproof court-house for Washington County, Indiana, at Salem; cost not to exceed $60,000.

Plans and specifications are on file at the Auditor's office at Salem; also at the office of McDonald Bros., architects, at Louisville, Ky. Printed specifications and any other information desired can be had on application to the architects.

No bid to be considered unless it be accompanied by a proper bond, information concerning which can be seen in the specification.

The right is reserved to reject any or all bids.

W. G. JAMISON,
544* Auditor of Washington County.

PUBLIC BUILDINGS. [At Atlanta, Ga.]

OFFICE OF ASSISTANT QUARTERMASTER,
No. 2 PETERS ST., WEST END,
ATLANTA, GA., May 15, 1886.

Sealed proposals in triplicate, subject to the usual conditions, will be received at this office **until 11 o'clock,** A. M., **June 14, 1886,** central time, at which time and place they will be opened in the presence of bidders, for the construction on the United States military reservation, near Atlanta, Ga., of the following described public buildings, viz.: —

One double set company barracks.
One triple set company barracks.
One commissary storehouse.
One bakehouse and two ovens.

Proposals will be received for each or all of the buildings complete, the price of each to be stated separately; or, for the various classes of work, viz.: Excavating and grading, foundations, brickwork, etc., the price of each class to be stated separately for each building.

Copies of plans and specifications, with full instructions to bidders, will be furnished on application to this office.

The work must be commenced by the 1st day of July, 1886, and completed by or before the 30th day of June, 1887; provided the contract is awarded as a whole, otherwise within a reasonable time after the award of the contract.

Each proposal must be accompanied by a guaranty equal to ten per cent of the amount of the bid, executed in accordance with the forms furnished by this office. Preference given to articles of domestic production and manufacture, conditions of price and quality being equal, and such preference given to articles of American production and manufacture produced on the Pacific coast to the extent of the consumption by the public service there.

The Government reserves the right to reject any or all bids or parts thereof.

Blank proposals and instructions as to bidding, terms of contract, payment, etc., will be furnished on application to this office.

Envelopes containing proposals must be marked "Proposals for construction near Atlanta, Ga., and addressed to the undersigned.

J. W. JACOBS,
Captain and Assistant Quartermaster,
546 and A. C. S., U. S. A.

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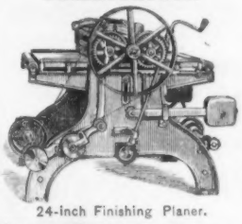

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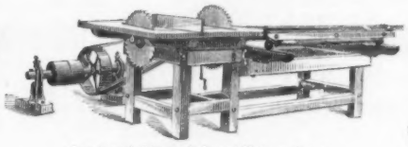

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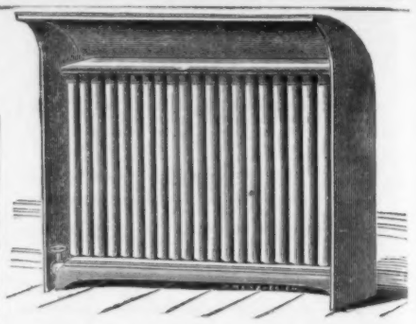

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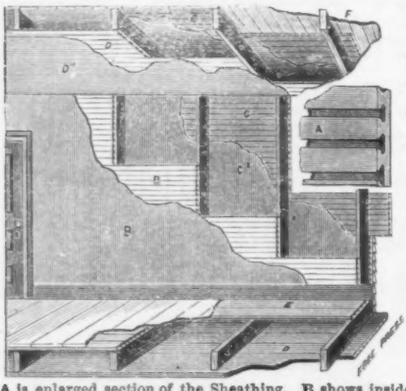

A is enlarged section of the Sheathing. **B** shows inside application to receive Plastering B. **C** is outside application for back-plastering C. **D** is application to receive plastering for Ceilings. **E** is EUREKA, used for Floor Linings for deadening Plaster.

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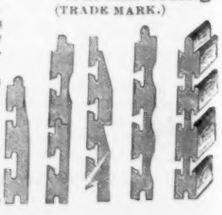

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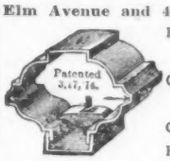

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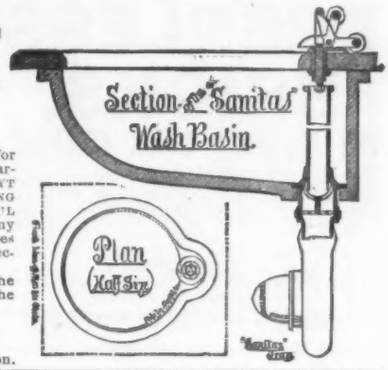

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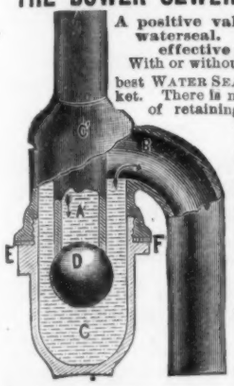

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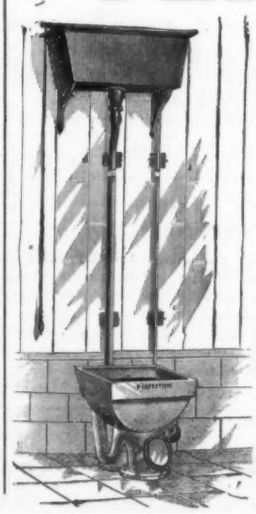

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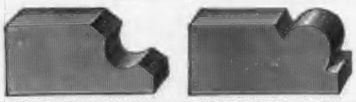

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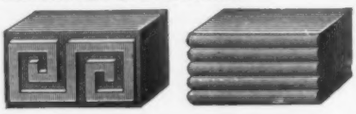

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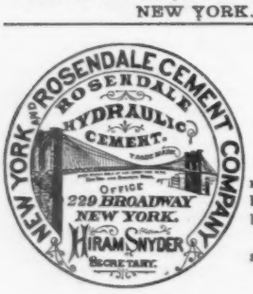

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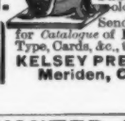

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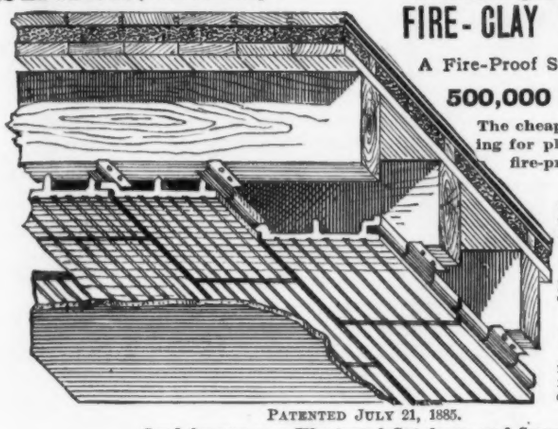

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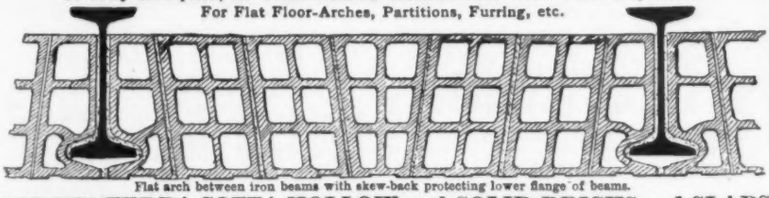

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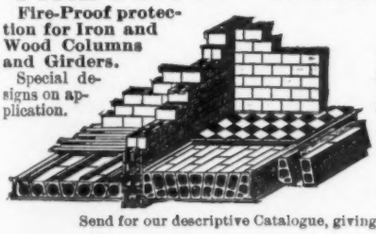

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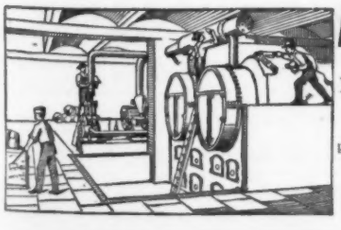

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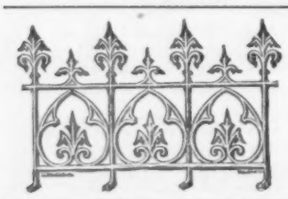

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